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ART. I. FACTS *and* INFERENCES, *chiefly relating to Medical Jurisprudence;* in a letter to Professor T. R. BECK, M. D. of Albany, from JOHN W. FRANCIS, M. D. Professor of Obstetrics, &c.

New-York, March 1, 1823.

DEAR SIR,

I PERCEIVE by the prospectus with which you have lately favoured me, that you are about to put to the press your long projected work on Forensic Medicine. I cannot doubt that your undertaking will prove of public utility, as the subject is one important in itself, and has hitherto received but slight attention in this country. It is well known, that every branch of this science has been long and successfully cultivated in many parts of the European continent, particularly by the Germans and the French. In Great Britain a very inconsiderable regard has been bestowed upon it, and the publications of the English physicians, few in number and limited in their range to two or three heads of inquiry, cannot be put in

competition with the extensive and elaborate disquisitions of their continental neighbours. Our own schools of medicine seem to be more alive to the practical importance of this branch of study than those of Great Britain. So early as the year 1804, my lamented colleague, the late Dr. James S. Stringham, taught the principles of this science in a course of lectures on legal medicine in Columbia College, in this city; and upon the reorganization of the College of Physicians and Surgeons in 1813, was appointed Professor of that branch. On the death of that gentleman in 1817, I was chosen his successor; and was thus induced to pay a more than ordinary regard to the facts and principles upon which juridical medicine is founded.

My object on the present occasion is to notice some few circumstances in relation to this department of science, which have fallen under my own immediate observation, or come within the reach of my knowledge. They may prove of partial utility at least, as forensic medicine rests in an especial manner upon the associated mass of individual facts.

Deformities of the Pelvis. It is familiarly known that these are often the cause of impracticable or fatal labours. That they are of much less frequent occurrence in this country than in Great Britain is generally admitted; their principal causes, rachitis and mollities ossium, being disorders very rarely seen among us. In a late American edition of Denman's Midwifery, I have noticed a diseased condition of the bones of the pelvis, in which there are peculiarities at once novel and important, and which might render parturition fatal. This is an instance of morbid change both in the form and cavity of the pelvis. The patient, an adult subject, fell on the right hip; the injury done the external parts was comparatively slight; but an inflammatory action took place in the bottom of the acetabulum, which caused a total absorption of the part, and the protrusion of the head of the thigh bone itself into the cavity of the pelvis. Nor was the diseased action limited to these changes; large deposits of osseous matter

were made within the pelvis, surrounding the absorbed acetabulum, and the head of the thigh bone was augmented to more than double its original size. The neck of the thigh bone and both trochanters are also considerably increased in bulk. The capacity of the pelvis is diminished about two inches in its superior and lateral portions. This specimen of change from natural structure may be adduced as an *instance of displacement of bone without fracture or dislocation.* This diseased bone is in the morbid collection of Professor Hosack.

Causes of Barrenness. These causes are numerous, either as connected with the uterus, the fallopian tubes, or the ovaria. Several morbid changes in the condition of the uterus induce sterility in the female. I have found dysmenorrhœa the most frequent; those cases I allude to in which a deciduous membrane is formed, and thrown off upon the evacuation of the menstrual discharge. I have noticed several instances of difficult menstruation accompanied by the formation of this substance, in all of which the patient has proved barren. I cannot admit, with some, that every case of painful menstruation is necessarily followed by the production of this caducous formation; though I believe there is no instance to be found in which the reverse of the position is not the fact. We are not to consider dysmenorrhœa, even when accompanied with the formation of the caducous membrane, as necessarily causing barrenness through life. A recent instance has convinced me, that even a diseased action may take place in the uterus, which shall finally deprive this viscus of its power to create this lining membrane, and that after excessive discharges from the part continued for some considerable time, the womb may be restored to its wonted gestative and parturient functions. Upon a *post mortem* examination, I was led to believe that the cause of barrenness in one case was to be ascribed to an impervious condition of the fallopian tube.

Impotence. Impotence in the male I have known to be induced by excessive venereal indulgence; by the abuse of

mercury from repeated and long continued salivations; and, in one instance, by the excessive use of lead injections in a protracted case of gonorrhœa. I have prescribed for the disorder when it could be considered only as a mental affection. This species of anaphrodisia, I apprehend to be much more frequent than is generally supposed; fortunately for the sufferer, it is more remedial than some other forms of the disorder. In organic impotency our prospects of success are generally hopeless. I am informed, by Dr. Hosack, of a singular instance at present existing in this city, where a congenital malformation of the penis does not occasion an incapacity for sexual and successful intercourse. Though the canal of the urethra terminates at some short distance from the extremity of the penis on its inferior surface, yet this deviation has permitted the subject of it to become the father of several children.

Pregnancy. Nothing but an association of circumstances can justify us in pronouncing upon this condition of the female in the early state. So equivocal are its signs, that the subject is involved in great difficulty, and the most experienced may often be deceived. Among the earliest and most decisive marks of pregnancy, is the non-appearance of the menstrual discharge at the usual period of its return. But the menses are often absent from other causes than those connected with pregnancy; and I have known cases in which they regularly appeared until the fourth, fifth, sixth, and seventh month of gestation. Denman, as well as other authors of celebrity, have been too positive in asserting that the suppression of the menses is always a consequence of conception. Heberden assures us, that he knew a female who had regular returns of the menstrua during four pregnancies, quite to the time of delivery. A healthy female in my own practice, the mother of five children, has had stated returns of the menses during her last two pregnancies until the close of the seventh month.

Baudelocque and Daventer have stated cases of women who have menstruated only during their periods of pregnancy.

It is probable, that in such instances the discharge was very sparing, and proceeded from the cervix uteri and the vagina. The previous appearance of the menses I do not consider as in every case indispensably necessary to conception. The examples in support of this opinion are indeed very rare, but I have had authentic information of such having been the fact with one female in this city; and the late Mr. Cruikshank, of London, in his lectures, was in the habit of detailing the particulars of a case which came within his personal knowledge, of a lady who was the mother of several children, and in whom there had never been the least appearance of the menstrual flux. The case recently recorded by Sir Everard Home, in the Philosophical Transactions of London for 1817, may also be cited in support of the truth of this assertion.

On numerous occasions, we find an intimate sympathy existing between the uterus and the breasts, as well as with other organs of the system.

We have the occasional occurrence of pregnancy during lactation. In the last American edition of Denman, I inserted the following note, on the authority of Professor Post: "A lady of this city was, about fourteen years ago, delivered of a healthy child, after a natural labour. Since that period, her breasts have regularly secreted milk in great abundance; so that, to use her own language, she could at all times easily do the office of a nurse, and she has uniformly enjoyed good health. She is now about thirty-five years of age; has never proved pregnant a second time, nor had any return of her monthly discharge." I shall now add a case of a directly opposite character, which has since come to my knowledge.

Mrs. P., a lady of excellent constitution, was married at the early age of fifteen, and, after the usual period of utero-gestation, was made happy by the birth of a child. The want of milk rendered it necessary that her offspring should be committed to the charge of another female. Mrs. P. menstruated during the greater part of her pregnancy, and proved again with child about thirteen months after her first confinement.

The same difficulty continuing, her second child was reared by other hands. She is now the mother of eleven children; her monthly courses never ceased during any one of her periods of pregnancy, until about the seventh month; nor have the breasts, either during the intervals between conception, or while she was with child, ever secreted the least quantity of milk. Her health has been throughout good, and her children robust.

De Graaf long ago observed, that the menstrual evacuation might be discharged from almost every organ of the body, under different circumstances. See also the Ephemerides. These vicarious discharges have been noticed by many clinical practitioners, and are doubtless owing to some deranged condition, either of the general system, or of the functions of the uterus.

Dr. D. L. Rogers, of the New-York Hospital, has lately furnished me with the following singular case:

"Mary Rathbone, aged 25 years, unmarried, of a delicate and scrophulous habit, was admitted April 2d, 1822, for scrophulous white swelling of the knee-joint, of six years standing. From its commencement, the disease has been gradually increasing. From the great irritation, she was reduced to a very low and feeble state, accompanied with regular paroxysms of hectic fever. After having gone through a course of tonics, and subjected herself to various modes of treatment, for six months, in order to preserve her leg, but in vain, finding her health rapidly failing, it was determined to amputate the limb, which was accordingly taken off on the 4th of November. Great prostration of strength, principally on account of the loss of blood, ensued. Very little re-action for the first twenty-four hours was observed; but on the third day, more favourable symptoms presented. In my afternoon visit of that day, the nurse informed me that the linen was covered with fresh blood. The dressings were carefully examined, but no hemorrhage could be discovered from the limb. Upon some surprise being expressed to her on this circumstance, she ac-

knowledged it to be her catamenia. Thus, after this discharge had been totally suppressed for six years, it has again regularly re-appeared. She is since rapidly recovering."

There is often great variety as to the time of life, at which the catamenial flux ceases, even in females of apparently similar constitutions and of the same country. Dr. Good, in his Nosology, has noticed examples where the discharge has sometimes been protracted to the age of seventy, eighty, and even ninety years. Rush records an example of regular menstruation occurring at the seventieth year. I am credibly informed of an instance now in New-York, in which the menses regularly recur, though the subject is in her seventy-second year.

The difference with regard to the time at which the menstrual function commences in the female Indians of America, and in the whites, is about four or six years. Our Indian females seldom have this discharge established, until they have arrived at their eighteenth or twentieth year. This circumstance has induced some writers to advance the absurd and untenable opinion, that the American Indian never performs this function; but such an error needs no refutation. I have conversed with several persons abundantly competent to give an accurate opinion, from a personal knowledge of facts, who have assured me, that the female Indians of the North American States have this discharge like as the civilized whites; but that it generally appears several years later in life, is more sparing in quantity, and ceases earlier. Sufficient and cogent reasons may be assigned for these facts. The severity of Indian life, scarceness of food, and precarious modes of living, less dispose them to venereal indulgences, and may be considered as sufficient causes why they are less prolific than the civilized race. Mr. Hunter assures us that the women seldom raise more than three or four children. "I have known a few to have five; and, very rarely indeed, one or two more."* Baron La Hon-

* Manners and Customs of several Indian Tribes, located west of the Mississippi. By John D. Hunter. 8vo. 1823.

tan, above a century ago, was sufficiently explicit on this subject. "The women of this country," says he, "are liable to the natural disorders, as well as elsewhere, and sometimes die of them." "Some French surgeons assured me," adds he, "that the European women void a much greater quantity, and hold the flux longer upon them, than these Americans." A striking fact, showing the close connexion between the alternate functions of the uterus and the breasts, is also given by La Hontan. These *American* females menstruate sparingly; but, concludes he, they suffer another inconvenience that frequently annoys them, which is "an overbearing quantity of milk."*

Areolæ. In the present state of juridical medicine, we are justified in rejecting the discoloration of the areolæ as among the certain signs of pregnancy. Though deemed by some an indubitable mark, I have always considered it as among the most equivocal. As pregnancy advances, certain changes are induced in the breasts, which, with other concurring circumstances, may strengthen or confirm our belief. Yet the enlargement of the mammæ, and the discoloration of the areolæ, are alterations brought about by several conditions. Various disorders of the uterine system will produce an augmentation in the size of the breasts, and a darkened areola. Occasionally the breasts of a virgin female, from irritation applied to the parts, will enlarge; and the maxim of the ancients, *lac habit ergo peperit*, is also now very properly rejected by modern physiologists.

I have witnessed three striking cases, in which the arolæ had lost their native hue, and assumed the deepening colour of pregnancy where that state did not exist. Moreover, within the past season I prescribed for a female, aged twenty-four, and the mother of three children, in whose case no modification of the colour of the areolæ has at any time taken place. In this respect she had faithfully preserved her virgin aspect.

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* New Voyages to North America. London. Vol. 1. 1703.

In another instance, the areolæ have never varied from their natural colour, though the lady is the mother of seven children: the breasts have always had their due supply of milk.

In the winter of 1821–2, I was invited to see a remarkable case of premature developement of the sexual organs of a female child, aged four and a half years, whose breasts exhibited an uncommon fulness, and from which by pressure a serous fluid could at pleasure be discharged.

An unmarried lady, aged 30 years, a resident of this city, upon the return of every monthly period, has had formed around the nipple of the right breast a dark circular scab, which is thrown off almost immediately subsequent to each menstrual flow.

Utero-gestation. The term of utero-gestation occasionally varies in inferior animals, and is not always regular in women. This difference is doubtless owing to the particular state of the mother's health. According to the report of Valentini, the faculty of Leipsic were complaisant enough to decide, that a child born five months and eight days after the return of the husband, may be considered as legitimate. Without placing great reliance on the references of Haller, that women have gone with young eleven, twelve, thirteen, and even fourteen months, we are justified in promptly admitting that gestation may be protracted to full ten months. I have, myself, become acquainted with an instance of this kind.

A lesson of caution is taught by the fact, that some married women, who have remained unimpregnated for a long period of time, have at length conceived and borne healthy children. Cases of this sort are instructive, inasmuch as they direct us to hesitate in denying the power of fecundity, unless we are certain of the existence of organic changes in the uterine system. I have it upon undoubted authority, that the wife of a gentleman in a neighbouring state who, during a cohabitation of twenty-seven years, remained barren, at length became pregnant, and is now the mother of two children.

Ovaria. I have ever regarded the menstrual evacuation as a distinct fluid. Independent of its peculiar qualities, the in-

fluence of the ovaria in its production is alone sufficient to claim for it a distinct character. Several examples might be adduced, satisfactorily proving the important agency of the ovaria in the production of the catamenial discharge. The case published in the Transactions of the Royal Society, 1805, is perhaps the most striking. This deficiency of the ovaria seemed to occasion a considerable approach in the female to the formation of the male. She died at the age of twenty-nine. "Having ceased to grow at ten years of age, (says the account,) she was in stature not more than four feet six inches high. Her breadth across the shoulders was as much as fourteen inches, but her pelvis measured only nine inches, from the ossa ilia to the sacrum. Her breasts and nipples never enlarged more than in the male subject. *She never menstruated.* There was no appearance of hair on the pubes, nor were there any indications of puberty either in mind or body, even at the twenty-nine years of age."

My colleague, Professor Mott, has communicated to me the prominent circumstances of an interesting case, which I shall here insert for its own singularity and importance. In a physiological point of view it furnishes much matter for reflection.

"New-York, March 1, 1823.

"Dear Sir,

"I sketch briefly the interesting case which I mentioned a few days since.

"A. B. aged 23 years, has been married upwards of two years. At no time has she felt the least gratification in the state of wedlock, nor has she ever seen the least evidence of the catamenial discharge. Her health has been always good, never having had a day's indisposition. About every twenty-eight days she feels some little uneasiness about the pelvis, which is followed for a day or two with an active diarrhœa. This occurrence she has noticed since about the age of seventeen or eighteen years.

"As no connexion could be effected by her husband, she at length consented to have the organs of generation examined.

The external parts are fully formed, but no vagina can be discovered. On a plane with the meatus urinarius, or about the situation of the hymen, there is a complete septum or partition. It has a firm appearance, though it yields somewhat to the finger. There is not the least opening in it at any part.

"Believing it more like an imperforated hymen than any thing else, I made an incision into it from the meatus downwards about an inch and in depth half an inch, but no evidence of vagina appeared. This was attempted to be kept open by dry sponge, but it in a great measure closed. After it had healed, I made another attempt to find the vagina, or make a new one. I began an incision, as before, with a sharp pointed bistoury, and carried it down to near the junction of the labia before, in extent about two inches, and gradually and cautiously continued it in the direction of a vagina, until it was made between two and three inches in depth. With the fore-finger of the left hand in the rectum, I not only protected this viscus, but directed the incision more correctly in the course the vagina should take.

"I do not believe she has any vagina or uterus. The breasts are of a proper size, but have never had any secretion. She has never felt the least sensual desire or gratification.

"Very truly yours,

"V. MOTT."

Weight of the child. There is considerable diversity in the statements of different accoucheurs on this subject. Dr. Hunter informs us, that of several thousand new born and perfect children which were weighed at the British Hospital in London, by Dr. Macauley, the smallest was about 4 lbs. and the largest about 11 lbs. 2 oz. but by far the greater number were from 5 lbs. to 8 lbs. avoirdupois. He further states, he never knew an instance of a child born at the natural period that weighed twelve pounds. Dr. William Moore, of this city, has had several cases of children born at the natural period, whose weight was full 12 lbs. each. Another practitioner of good authority has furnished me with a similar fact; and I had one under my own observation. Instances also have fallen with-

in the practice of some of my medical brethren, of the child weighing 13 lbs. and upwards. A memorable case of pregnancy occurred in New-York two winters ago, where from untoward circumstances the labour was protracted four days, and the life of the mother closely jeopardized in her efforts to expel the child. She was finally relieved by the forceps, and brought forth a dead fœtus, the actual weight of which was 16½ lbs. avoirdupois.

Umbilical Cord. Mauriceau and Wrisberg have given us the measures of different cords. The former states, that he has seen it an ell in length; and the latter, forty-eight inches. Dr. Ducachet, of this city, attended a case of labour in 1822, in which the length of the cord was five feet. It was several times loosely coiled round the neck of the child. Contrary to usual observation, in like cases, the infant was large and well formed.

An important case of infanticide, as it was denominated, came before the decision of our court some years since, which I shall briefly mention. A mother was delivered of a full grown and well-formed child still born. Upon examination, the cord was found to be of more than ordinary length, with a knot in it. The mother was accused of having destroyed the life of the child by this means, the circulation by the cord being completely cut off. Several medical witnesses were summoned, all of whom, I understand, gave it as their opinion, that the fœtus had by design been thus deprived of vitality. The unfortunate woman persisted in behalf of her innocence, and affirmed, that the state of the child, as well as every peculiarity of her labour, whatever it might be, had been beyond the reach of her control. At this stage of the inquiry, an additional medical witness was called in, who stated, that similar accidents had before taken place, which were recorded on good authority. The mother was accordingly acquitted. Smellie states an instance of this nature, where from the length of the cord, the child, in passing through a coil of it during labour, produced a knot. I am indebted to Dr. Hosack, the last medical witness in this interesting case, for these particulars.

Effects of Lightning. It is, I believe, a popular opinion, that the bodies of persons killed by lightning rapidly run into putrefaction; that the blood does not coagulate; and that the muscles do not take on that rigidity and firmness so generally observed in death from other causes. I have examined two cases of death produced by lightning; in one, the muscles remained flaccid, and blood flowed freely from the arm from an orifice I made some hours after death. In the other instance, the body, became soon after the extinction of life, excessively rigid. Father Beccaria gives a similar example.*

Abstinence from Nourishment. We have many cases recorded of extraordinary abstinence from fluid and solid nourishment, without injury to the constitution. Dr. Willan has favoured us with a curious and instructive instance of this nature. Many we know to have occurred from morbid causes. In the summer of 1819 I attended a female black, aged twenty years, who, believing herself to be affected with the disorder called Obi, obstinately refused all sustenance for a term of seven weeks. During this period, the whole amount of what she took for her support was about two cups of water slightly medicated with wine. She recovered.

Congenital Diseases. Under this head I shall notice a few cases which strikingly show the effects of the venereal disease on the fœtus in utero, as well as others which corroborate the fact, that certain peculiarities of conformation are sometimes hereditary. I have, on a former occasion,† given it as my opinion, derived from facts, that the diseased mother may affect the fœtus while in utero, and the child be born with the venereal disorder; that the diseased infant may, by sucking, infect the nurse; and that the infected nurse may, in turn, communicate the complaint to the infant suckling at her breasts.

I have prescribed for four cases of the venereal disease communicated from the mother to the fœtus in utero; three

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* Treatise on Medical Electricity, 4to.

† Denman's Midwifery, New-York Edition of 1821.

of these cases occurred where the genital system of the mother was in a perfectly sound state; in one there were ulcers of the labia, and constitutional vitiation. In another formidable instance of the disorder affecting an infant, it was satisfactorily ascertained that the little sufferer had imbibed the complaint by sucking an infected nurse. I am aware that high authority has controverted these positions, but I am equally certain that clinical experience supports their accuracy. I am scarcely prepared to agree with the late Mr. Hey, of Leeds, that the fœtus may be contaminated when the mother has never been previously affected with lues venerea in the organs of generation, and where no apparent disease existed in the father at the time of impregnation. When Mr. Hey asserts, that a female may receive the venereal infection in the angle of the lips from a woman whose breasts she has drawn, who was supposed to be in a diseased state; and that the same woman may communicate lues venerea to several other women by drawing their breasts,* I apprehend that he utters a well-grounded truth.

During the last summer I attended, in consultation with Dr. James Anderson, of this city, a very interesting case of lues venerea, in a young infant. The disorder appeared within a few days after birth, and soon became extensively diffused; the characteristic venereal blotches exhibited themselves very generally over the surface of the child, but were most crowded and continued longest about the genitals. The mother had at no time any appearance of disease about the pudenda. Dr. Hosack informs me, that he has had three cases of syphilis in children, which appeared contemporaneously with their respective births.

There is a striking coincidence in the cases which I shall now communicate to you, with the memorable one published concerning the extraordinary calculator, Zerah Colburn, as drawn up by Professor Carlisle†.

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* Medico-Chirurgical Transactions of London, vol. vi.

† Philosophical Transactions of Royal Society of London for 1814.

A Mr. L——, of New-York, is the father of eight children, seven of whom are now living. Of the whole number, six have had supernumerary fingers, with one or two exceptions, on both hands. The superfluous members are nearly all completely formed, and grow from the outside of the metatarsus of each hand. Their direction varies in some cases; some being parallel with the other fingers, and others standing off. The same peculiarities obtain as respects the toes: several of the children have ten fingers and ten toes, exclusive of the two thumbs and two great toes: others of them have this redundancy of toes on one foot only. Mr. L——, the father, has these peculiarities himself, and on the male side, his father, his grandfather, and his grandfather's brother: in short, so far as the fact can be well ascertained, this excess of members has been found to occur on the male side only. But Mr. L——'s children, girls as well as boys, have this peculiarity. I have derived this account from the family themselves, in company with Dr. Walters, their physician.

Mr. S———, of New-York, is the father of several children;—two of them possess the peculiarity of a superfluous finger on each hand, attached to the metatarsus, and have also the two middle fingers of each hand webbed or united together. There is also in a part of the family an additional toe, also webbed. Mr. S. is himself exempt from these peculiarities of formation; but his mother and her grandmother had them, as also some others of the females. I have not been able to trace the transmission of these deformities by propagation, so clearly as in the former case; but it would appear from the best inquiry that Dr. Walters and myself could make at the time, that they have existed on the female side exclusively.

Repeated observation has proved the hereditary transmission of club-feet. A Mr. W—— of this city, born himself with this deformity, has children with the same.

Hereditary Stuttering. On this subject I shall avail myself of the account favoured me by the writer, Dr. John B. Beck.

"The subject of hereditary disease is so curious, and at the

same time so little understood, that every fact which promises to enlarge our knowledge concerning it, deserves to be registered. Under this impression the following is stated:

"Margaret Fisher, a coloured woman of this city, aged twenty-nine, has stuttered from the time she first began to talk. Her mother, she informed me, who died at the age of fifty-two, had the same defect in her speech during her whole life.—Whether her grandmother stuttered she does not know. She has two children, one aged eight, and the other four years, both of whom also stutter. Thus through three generations has this defect been perpetuated.

"That the stuttering in the foregoing cases is not to be attributed merely to imitation on the part of the children, is evident, I think, from the fact, that numerous instances are to be met with, in which one or other of the parents have this defect without any of the children being affected with it. In the present case too, no satisfactory reason can be assigned why the children should not have imitated the father, who does not stutter.

"Independent of these considerations, however, a fact has come to my knowledge, which places it beyond a doubt that in some instances at least it must be hereditary. A gentleman now living has stuttered ever since his first attempts at speech. His father, who stuttered before him, died while the son was an infant, and before he began to speak. In this case it is evident that imitation could have had no influence."

I might enlarge, by noticing some other examples of the hereditary propagation of peculiarities. There is doubtless, in some instances, a close connexion between the animal propensities and the physical structure, and between both and the intellectual powers. "All family resemblances, however trifling they may appear," says Mr. Carlisle, "are interesting to the physiologist. Though the causes which govern the production of organic monstrosities, or which direct the hereditary continuance of them may, for ever remain unknown, it still seems desirable to ascertain the variety of those alterations, and to mark the course they take, where they branch

out anew, and where they terminate. There is doubtless a general system in even the errors of nature, as is abundantly evinced by the regular series of monstrosity exhibited both in animals and vegetables."*

The peculiar and extraordinary talents of Zerah Colburn, are universally known. I am not aware that the two families, whose cases of similar hereditary monstrosities I have given, are characterized by any remarkable developement of either intellectual or physical energy. In the Scriptures we have an instance of redundancy of fingers and toes mentioned, as follows:—"And there was yet a battle in Gath, where was a man of great stature, that had on every hand six fingers, and on every foot six toes, four and twenty in number; and he also was born to the giant."†

"Individuals are occasionally produced," says Professor Lawrence,‡ "with supernumerary members on the hands or feet, or on both; and from these, whether males or females, the organic peculiarity frequently passes to their children. This does not constantly happen, because they intermarry with persons of the ordinary form; but if the six-fingered and six-toed could be matched together, and the breed could be preserved pure by excluding all who had not these additional members, there is no doubt that a permanent race might be formed, constantly possessing this number of fingers and toes."

Gonorrhœa. Every one is apprised how various this disorder is as to the time when it first manifests itself after exposure. Mr. Hunter inclines to the opinion that it may arise within twenty-four hours after the poison has been applied.—Moreover, on good authority he was also assured, that six weeks have passed after the application before any symptom appeared. In one instance, I had the best evidence of gonorrhœa occurring within twenty-two hours after sexual con-

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* Philosophical Transactions for 1814.

† 2 Sam. chap. 21.

‡ Lectures, p. 412.

gress; as the patient had no opportunity of receiving the infection for months before. A decision in law was not long since made in one of our courts, founded in a great degree upon the impossibility of this disorder producing any effects until two or three days after exposure. A young female had preferred a charge of an attempt at criminal intercourse with her. Upon examination, the accused was found to have gonorrhœa, as also the accuser; but the interval between the time the alleged crime was committed and the existence of gonorrhœa in the female, not being longer than about twenty-eight hours, the action was set aside, principally on the ground of a previous loss of virginity.

Chancres. There is also great uncertainty as to the period when this effect of the syphilitic virus shows itself after exposure. In a majority of cases it is no doubt longer in appearing than gonorrhœa; but much depends upon the peculiar condition of the part. I have had several cases in which the chancre did not appear until three or four weeks after venereal contact; and in one strongly marked case the patient remained exempt from the penalty of his offence two months after connexion.

Cow-Pox. I may mention a fact on this subject, that militates against a general principle which has been established concerning this complaint; that is, that the eruption of cow-pox never appears but in the part where the virus has been applied. In the spring of 1819 I vaccinated a female child, aged four years, on the arm; the vesicle went regularly through its course; but on its sixth day another larger than the first made its appearance half an inch above the outer angle of the superciliary ridge of the left eye, and went through its several stages precisely as the former.

Salivation. We know it to be the received opinion, that this action is the result of mercury only. Yet I have seen copious salivation induced by the use of cremor tartar, continued in small doses for some time. Arsenic, like mercury, will also occasion the same peculiar action on the salivary glands. I have been well assured of the following occur-

rence: In the case of a female, aged forty-five years, cicuta was given, and a profuse salivation induced, with the peculiar fœtor accompanying the action of mercury on the salivary glands. The cicuta had been continued for several weeks, for the purpose of allaying a violent spasmodic cough. The patient had not taken mercury in any of its forms.

Poisons: Elaterium. The momordica elaterium is very properly classed by Orfila among the class of acrid poisons. Some experience has convinced me, that it is a powerful and at the same time a most valuable medicine. I am prepared to believe, that to the extent of a few grains it might induce a serious, perhaps fatal action. Dr. Ferriar asserts that, when incautiously given, it is nearly as active and as dangerous as arsenic. I have found the sixth or eighth of a grain powerfully efficacious as an hydragogue.

Croton Tiglium. I have heard of this article being recommended to the amount of a tea spoonful at a dose. Scarcely any prescription could prove more hazardous. Half a drop is almost always sufficient to produce powerful catharsis; and in one male patient, aged forty years, two drops manifested a prompt and striking effect upon the brain and nervous system. Like some other powerful oils, there is no doubt it will at times be had recourse to for unjustifiable purposes.

Oil of Tansy. This article, (tanasetum vulgare,) though omitted by Orfila in the list of vegetable poisons, deserves to be considered as one of the many means by which nefarious ends are occasionally accomplished. As an emmenagogue, tansy is often used by the vulgar. In the summer of 1816, a young woman of this city lost her life by incautiously taking half an ounce of the oil at a dose, with a view of producing abortion. Great pain and anxiety were experienced about the epigastrium soon after the medicine was swallowed: these rapidly increased until near her death, which happened within a few hours.

Lytta. The formidable representations which Orfila has made concerning the effects produced by an over dose of the lytta are almost sufficient to deter us from the use of one of

the most valuable articles of the materia medica, and that too in cases where I think it would be difficult to find a substitute. As a medicine, cantharides in moderate doses has been long known; its liberal and successful exhibition internally in cases of impotence is, comparatively speaking, a novelty in practice. In several distressing instances of this nature, I have increased the dose of the tincture of lytta from twenty or thirty drops two or three times a day, until the quantity has become one or two ounces at each dose, and as often repeated. On one occasion a patient under my charge, in a state of extreme mental anguish, took, with a view to self-destruction, six ounces of the tincture of cantharides during the night without the least mischief arising thence.* The experience of several years in several cases of anaphrodisia and impotence has convinced me that the accounts we find recorded of the pernicious consequences arising from the lytta are exaggerations.

Arsenic. This powerful agent, whether given internally or applied externally, is capable of destroying life with equal certainty. A valuable member of our community, the late Mr. O——, fell a victim to the empirical practice of arsenic in the form of unguent applied to a small tumour situated between his shoulders. In this case I had an opportunity of testing the accuracy of Mr. Brodie's idea of the action of the arseneous acid on the human constitution. Mr. Brodie† considers the mineral poison in its operation to produce its effects primarily on the nervous system, and that death is the result of the suspension of the functions of the heart and brain. In Mr. O——'s case this theory was verified. There was paralysis of almost every limb of the body, and every joint seemed to be greatly enlarged and tumid; the intellectual functions were nearly destroyed: he died suddenly and unexpectedly, in a manner characteristic of death by arsenical poison.

Poison of the Rattle Snake. It is difficult to add much to the important details furnished us concerning the influence of

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* Thomas's Practice of Practice, Appendix, article Anaphrodisia.

† Philosophical Transactions, 1812.

this poison by Sir Everard Home, as given in his history of the case of Thomas Soper.* Mr. Home mentions the intellectual powers of the patient to have been materially affected. In company with the late James Inderwick, of the United States Navy, I visited, in the year 1812, a young man, Mr. A—— of New-York, who was seriously bitten in the arm by a rattle snake, that had been kept in confinement for a public show. The action of the poison, as in the case of Soper, began to manifest its effects within the first half hour, and its local changes, such as great swelling, pain, &c. were also similar to those stated by Sir Everard Home. But in the case of Mr. A—— the mind preserved its wonted functions throughout his whole illness. I have reason to believe that the action of this poison is primarily through the medium of the sanguineous circulation. When the bite is inflicted in a large vein its effects are more immediate, and its fatality more certain than under other circumstances.

Spontaneous Rabies. The highest authorities in our profession have recorded instances of spontaneous hydrophobia occurring among the human subject, as well as among brutes.† The causes by which spontaneous rabies may be induced, are the violent emotions of the mind, sorrow, fear, rage, fright, the want of food, extreme fatigue, and the like. In company with Dr. Hosack I had the singular opportunity of attending a case of hydrophobia arising in a young man aged thirteen, independant of the bite of a rabid animal. He had been severely treated by his guardian or overseer for some imaginary offence; the want of food and clothing at an inclement season of the year, were the exciting causes of his disease. His mind so far lost its integrity that he had come to this city from a place distant some fifty miles, wandering to and fro in extreme hunger and almost naked. I made repeated visits to him; and did not find that the symptoms of his disorder differed in any es-

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* Philosophical Transactions, 1810.

† Sauvages, Nosolog. Method. Felix Platerus. Philosophical Transactions.

sential points from madness induced by the bite of a rabid animal. His tremors and convulsive actions, his repugnance to fluids, his disquietude, the sensation of constriction, and the pain when efforts were made to induce him to swallow drinks, were all such as I have since recognised in a formidable case of hydrophobia.* He was bled, and from change of circumstances was ultimately restored to his former health.

Ergot. I shall here briefly note a few of the evil consequences resulting from the imprudent use of this too fashionable article. Within the last two years, I have been consulted in three cases, in which the ergot was given in order to expedite labour; in every one of them it has induced a total suspension of the menstrual discharge. In three other cases in which the spurred rye was administered, it had the effect of hastening the labour, with the immediate destruction of the child. In two of these last instances deformities of the pelvis existed, and the mothers also shortly after expired.

The preceding facts are stated with designed brevity; their application to questions of medico-legal science is obvious.

With sentiments of respect and esteem,

JOHN W. FRANCIS.

DR. T. R. BECK.

ART. II. *An Experimental Inquiry into the Similarity in virtues between the* PODOPHYLLUM PELTATUM *and* CONVOLVULUS JALAPA. By HENRY SCHNECK, of Pennsylvania, Member of the Medico-Chirurgical Society of the University of New-York, &c.

NATURE has furnished America with some of the most potent articles of the materia medica; and many unknown plants, doubtless, inhabit our country, which are imbued with properties capable of obviating some of the diseases that have hitherto resisted the best mode of treatment.

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* Case of Cann.

The virtues of some of our indigenous plants are as yet but too imperfectly known; and among these, may be classed the Podophyllum Peltatum, which, we shall endeavour to show, possesses virtues similar to those of the Convolvulus Jalapa.

Scientific Description.

Podophyllum (Gen. plantarum, ed. Schreb. N. 879) Corol. 9 petala, calyx triphyllus; Bacca 1—locularis, stigmata coronata.

P. Peltatum—Foliis peltatis lobatis—lobis antice dentatis accuminatis: floribus axilaribus solitariis pedunculatis—(Species Plantarum Wildenowi.)

Familiar Description.

This is a very common indigenous perennial plant. It grows abundantly in various parts of the United States, and is known by a variety of names, such as May-Apple, Mandrake, Wild Lemons, Duck's-Foot, &c. It delights in rich soils, and seems to love shady places. Early in the spring of the year, its young and tender leaves, folded up in the shape of a cone, and enveloping the embryo of the flower, push out of the earth. In a few days, the two leaves expand; they are broad and lobed, having the foot-stalk inserted in the inner edge of the lower surface of the leaf. Out of the fork formed by the junction of the two foot-stalks and the stem, issues the flower-stalk; it is about one inch long, and pendulous. The flower is large; has nine *white* leaflets; its calyx, or flower-cup, has three leaves. The plant grows from six inches to a foot high; it flowers in April. After the flower is withered and fallen, the capsule or fruit generally expands until (about the latter end of July) it has acquired the size of a small hen's egg. It now turns yellow, and contains a sweetish mucilaginous pulp, not unpleasant to the taste. The root runs along without diminishing in thickness, (which is about one-eighth of an inch,) sometimes for 3, 4, or 5 yards. At intervals of about a foot, it has enlargements or knots, sending out radical fibres. The root is fleshy, resembling very much in taste the root of the

convolvulus jalapa. It is the root which is used in medicine, and is an excellent cathartic, in doses of thirty grains, answering as a substitute for jalap. The best time for gathering the May-Apple, for medicinal purposes, is the autumn, when the leaves have turned yellow, and are about falling off. In order to ascertain the similarity in virtue between the podophyllum peltatum and jalap, I instituted the following experiments.

*Experiments on May-Apple.**

Experiment I.

At half past 10 o'clock, A. M., after a slight breakfast, I took thirty grains of the powdered root of the podophyllum peltatum in molasses, my pulse beating 89 strokes in a minute.

Minutes,	5	10	15	20	30	40	50	60	1.10	1.15	1.20	1.30
Pulse,	81	82	82	81	80	77	76	75	73	73	73	73
Minutes,	1.40	1.50	2.00	2.20	2.30	2.40	2.50	3.00	3.30			
Pulse,	72	72	74	75	76	76	78	78	78			

In ten minutes after taking the medicine, I experienced a burning sensation in my œsophagus, accompanied with a considerable discharge of saliva. The irritation in the throat soon after left me, but the discharge of saliva still continued. My pulse at this time suffered but little variation; it was a little increased in fulness and force. In twenty minutes, the discharge of saliva entirely left me. In forty minutes, I felt some nausea. In fifty minutes, the nausea increased; at this time, there was a sensible diminution of the pulse, in frequency and force. At 1.15, nausea considerable; and from this period it increased, until 1.40, at which time the pulse was slow and feeble. At 3.00, it purged me; nausea diminished.

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* It may be proper for me to remark here, that the experiments which are related were several times repeated; but as their results were nearly similar to those mentioned, I have conceived it unnecessary to detail them, particularly as I wish to avoid prolixity as much as possible.

At 3.10, the nausea subsided. At 3.50 after the exhibition of the medicine, had a second passage. At 4.00, had another, and this, like the former, was unattended with griping. Between the interval from 4.00 to 6.00, had two more passages. I attribute the reduction of my pulse to the nausea occasioned by the medicine. In order to ascertain whether the effects of the medicine, in occasioning nausea on myself, was owing to idiosyncrasy, I made the following experiments:

Experiment II.

At 8 o'clock, A. M., I gave to Mr. J. B. twenty-five grains of the Podophyllum Peltatum in molasses, his pulse beating 74 strokes in a minute.

Minutes,	5	10	20	30	40	50	60	1.10	1.20	1.30	1.40	1.50
Pulse,	76	76	75	75	76	69	70	68	68	68	70	72

Minutes,	2.00	2.10	2.20
Pulse,	72	73	73

Immediately after he took the medicine, he complained of a slight irritation in his throat. This disagreeable sensation soon after left him. In twenty minutes, he had somewhat of a ptyalism, the pulse nearly natural. In thirty minutes, the ptyalism subsided. In fifty minutes, nausea came on; and at this time there was a diminution of the pulse in frequency and fulness. At 1.10, nausea increased, and continued to do so till 1.50, when it left him. At 2.40, he had a passage; and in the course of five hours after taking the medicine, it purged him three times without injury.

Experiment III.

July 16th.

At 9 o'clock, A. M., Mr. A. H. G., aged 48, being in perfect health, I gave twenty grains of the Podophyllum Peltatum, in molasses, his pulse beating 66 strokes in a minute.

Minutes,	5	10	15	20	30	40	50	60	1.10	1.20	1.30	1.40
Pulse,	68	68	68	68	67	66	64	64	63	63	63	64

Minutes,	1.50	2.00	2.10	2.20	2.30
Pulse,	64	65	65	65	66

In seven minutes, he had a very disagreeable sensation in his throat, but this was of short duration; his pulse rose, and increased in frequency and strength. In thirty minutes, he had a slight ptyalism. In forty minutes, the ptyalism left him. In sixty minutes, he complained of nausea. At 1.10, the nausea yet considerable, and continued to increase until 1.30, at which period the pulse was considerably diminished in frequency and force. At 1.50, the nausea left him. At 3.20, the medicine produced one copious stool, and in the course of six hours, had two more evacuations, without having experienced any griping.

Experiment IV.

The following experiment was obligingly communicated to me by John W. Gloninger, M. D. of Lebanon, Pennsylvania.

Lebanon, Pa. July 25, 1822.

"Dear Sir,

"I am extremely happy in having it in my power to communicate to you the result of a trial which I made with the Podophyllum Peltatum. At 10 o'clock at A. M. I took thirty grains of the pulverized Podophyllum Peltatum; my pulse beating 74 strokes in a minute; as to tenseness and volume nearly natural. I had about 8 o'clock taken a light breakfast, and at the time of taking the medicine I experienced a sense of heaviness, and some slight pain in my head.—In five minutes my pulse 75.

Minutes,	10	15	20	25	30	40	45	50	55	60	1.05	1.15	1.20
Pulse,	76	78	78	78	75	74	73	71	71	70	70	70	68

Minutes,	1.25	1.30	1.35	1.40	1.50	2.00	2.10	2.20	2.30
Pulse,	68	68	67	66	66	67	68	68	70

Minutes,	2.40	2.50	3.00	3.10	3.30	3.40	3.50	4.00
Pulse,	70	71	72	72	72	73	73	73

"In five minutes after taking the medicine, I felt a burning sensation in the œsophagus, accompanied with an increased excretion of saliva, which were of short duration, both having entirely vanished in fifteen minutes more. My pulse at this time very soft and regular. At thirty minutes I felt some

nausea, and a slight spasmodic pain at the præcordia. At thirty-five minutes nausea increased; pulse soft and slow. At 2.30 nausea increased, until 3.40, when the medicine procured one stool, and an alleviation of the nausea followed. At 4.10 considerable weight and oppression at the pit of the stomach; headach diminished. At 4.30, after taking the medicine, a second passage—this as well as the former unattended with griping. I had, in the course of the evening, two more passages. It may be necessary to remark, that owing to idiosyncrasy, I am always under the necessity of taking a very large dose of any purgative medicine. As far as I am authorized to judge from a single trial, I consider the Podophyllum Peltatum a very valuable cathartic, as it operates mildly and efficiently.

"If the foregoing communication can avail you any thing in your present interesting investigation, I beg you to consider it entirely at your command, and to give me credit for the sincerity with which I have the pleasure to be,

"Your friend,

"JOHN W. GLONINGER."

Experiments on Jalap.

Experiment V.

August 2.

At two o'clock, P. M. I took thirty grains of Pulv. Jalap in molasses, my pulse beating 78 strokes in a minute.

Minutes,	5	10	15	20	30	40	50	60	1.10	1.20	1.30	1.40
Pulse,	78	79	79	77	76	75	75	76	76	77	77	77

Minutes,	1.50	2.00	2.10	2.20
Pulse,	77	78	78	78

In forty minutes after taking the medicine I felt some pain in the stomach, accompanied with a slight nausea—my pulse was a little diminished in frequency. In sixty minutes the nausea left me, the pulse became natural. In five hours it purged me, and in the course of seven hours after taking the

medicine, had two more alvine evacuations, attended with considerable griping.

Experiment VI.

August 27.

At ten o'clock, A. M. I gave to Mr. J. S. H. twenty-five grains of pulverized jalap in molasses, his pulse beating 75 strokes in a minute.

Minutes,	5	10	15	20	30	40	50	60	1.10	1.20	1.30	1.40
Pulse,	76	76	77	74	74	73	72	73	74	73	74	74

Minutes,	1.50	2.00	2.10	2.20
Pulse,	73	74	74	74

In fifty-three minutes after the exhibition of the medicine, he complained of some pain in his stomach, attended with slight nausea; the pulse was somewhat diminished in frequency. At 1.10 he complained of neither pain nor nausea, the pulse natural. In 5.50 the medicine procured a stool, and one hour after had another. It may be necessary to remark, that this gentleman had no passage for three days previous to taking the jalap.

Experiment VII.

August 28.

At 9 o'clock, A. M. J. W. took thirty grains of jalap in molasses, his pulse beating 70 strokes in a minute.

Minutes,	5	10	15	20	30	40	50	60	1.10	1.20	1.30	1.40
Pulse,	72	73	71	71	72	69	67	67	69	68	67	68

Minutes,	1.50	2.00	2.10	2.30	2.40
Pulse,	68	68	69	69	68

In forty-eight minutes he had a slight nausea, with alteration in his pulse. In sixty-three minutes the nausea subsided. At 4.55 the medicine procured a stool, and in one hour twenty minutes it purged him again. This, like the former, was attended with griping.

Experiment VIII.

August 29.

At 8 o'clock, A. M. Mr. I. L. took twenty-five grains of pulv. jalap in molasses, his pulse beating 73 strokes in a minute.

Minutes,	5	10	15	20	30	40	50	60	1.10
Pulse,	74	75	74	74	74	73	71	71	72

In fifty-three minutes it excited some nausea; there was at this time a slight diminution of the pulse in fulness and tenseness. In sixty-eight minutes the nausea went off, the pulse became natural; and in six hours and thirty minutes it procured four stools, accompanied with much griping. To use his words, 'I never took a purge that griped me so much.'

I instituted several experiments with the extracts of Jalap and Podophyllum Peltatum, procured from an apothecary of the city of Philadelphia, but as the results corresponded so exactly, I have not recorded them, believing that those already related are sufficient to establish the similarity in virtue between the two articles. Indeed, from the comparative trials made with them, the analogy between their operation is so striking, that it may be said in truth, that in whatever form of disease jalap may be serviceable, the podophyllum will be found equally so. The only difference appears to be, that the May-apple root is more prompt in its effects, causes somewhat more nausea, but not occasioning any griping, which has been a constant attendant in the experiments made with the jalap. It does, therefore, in my opinion, supersede the employment, and answer as a substitute for that exotic vegetable.

Art. III. *A case of* Anthrax *successfully treated by Blisters.*

By John B. Beck, M. D.

In the month of October last, I was called to visit A—— V——, aged fifty-one years, and found him suffering under a carbuncle situated low down on the back. On inquiry, I was

informed, that it had first made its appearance about ten days previously, in the form of a small red pimple, extremely painful, and accompanied with a burning heat in the part. As it was supposed to be nothing more than a common bile, poultices were daily applied, without however arresting the progress of the tumour, or alleviating in the least the sufferings of the patient. Under this treatment it continued to increase in size, until the second of October, when it broke, and commenced discharging an ill-conditioned matter. It was three days after this that I first visited the patient, and I then found the whole extent of the tumour to be about four inches in diameter. In the centre were a number of apertures, precisely of the honey-comb appearance, through which matter was discharging. The part surrounding this was hard, and of a dark red colour, and the whole tumour presented a most offensive and malignant aspect. From the beginning there had been slight febrile paroxysms, and at present there was considerable prostration of the powers of life. The patient had long indulged in habits of intemperance, by which his constitution had been much enfeebled. No immediate or local cause of disease, however, could be discovered.

I first directed a cathartic to be administered, and a yest poultice to be applied to the part. Finding no improvement on the subsequent day, I applied a large blister, covering completely the whole of the carbuncle. The blister drew well, and had the effect of completely relieving the heat and pain of the part. The whole appearance of the carbuncle was also improved; the surrounding inflammation had assumed a more healthy and red colour, and the discharge was less offensive. A light poultice was now applied, and as the patient was extremely feeble, Peruvian bark and porter were ordered to be freely given him, and Dover's powder to be administered at night. Two days after the application of the first blister, a second was applied with still greater advantage than the first. In every respect the appearance of the carbuncle seemed to be much improved by it. In a few days the sloughs separated, and the ulcer gradually healed under dressings of simple

basilicon ointment. The whole period which elapsed between the first appearance of the carbuncle and its final cure was about six weeks.

I have been induced to record the foregoing case, because the practice as regards the treatment of carbuncle is very far from being settled; and as the disease is but seldom met with, it is necessary to preserve the history of individual cases, before we can arrive at general conclusions on the subject. Among the French surgeons, the application of the actual cautery is still fashionable. According to Baron Boyer, it is supposed to "limit the progress of the gangrene, and to rouse the languid action of the part."* This practice, although supported by the high authority of the ancients,† has long since been discarded by the English, who trust almost exclusively to free incisions in the part, together with general tonic treatment.

The practice of using blisters as a local application to carbuncle, originated in this country, and judging from the silence of the latest foreign works respecting it, is unknown abroad. Riverius indeed had long since recommended them in all cases of carbuncle, but he does not appear to have applied them directly to the part, nor did he entertain very correct notions concerning the mode of their operation. In a case which he details, in which the carbuncle was situated on the forehead, a blister was put on the neck, and to it the cure was mainly attributed. His language is so emphatic on this subject, that it deserves to be quoted. "In hoc casu notandus est præcipue vesicatorii usus, quod magnam humoris virulenti portionem derivans, præcipuam curationis partem fecisse credibile est. *Ideo in omni carbunculo usurpandum censeo, et parti viciniori admovendum.*"‡ When it is recollected, that in the case related by our author, caustic had already been applied to the

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* A Treatise on Surgical Diseases, &c. by Baron Boyer, translated by A. H. Stevens, M. D.

† Nihil melius est, quam protinus adurere. Celsus de Medicina, p. 316.

‡ Observat. Med. &c. L. Riverii Cent. iv. p. 7.

carbuncle, the agency of the blister in the cure will be rendered more than questionable. As to the derivation of morbid matter by means of the blister, our present views of pathology will not admit of the explanation.

With the exception of Riverius, I have not met with any foreign writer who speaks of this remedy in the treatment of Anthrax. In this country blisters were first suggested, not many years since, I believe, by Dr Physick, in consequence of the beneficial effects which had been found to result from their use in checking the progress of mortification. Since that time this distinguished surgeon has relinquished this practice, and in a late publication,* he gives a decided preference to the use of caustic. Whether blistering would prove successful in every instance, it is impossible for me to say. In the case which I have related, however, the effect was so evident and decided as to leave no doubt in my mind as to its general efficacy. It is to be hoped, that a remedy, certainly possessing many advantages over caustic, scarification, &c. may not be prematurely abandoned, without being tested by further trials.

ART. IV. *Case of Self-performed* CAESAREAN SECTION. Communicated to DRS. FRANCIS and BECK, of New-York.

IN the afternoon of January 29th, 1822, I was called upon by Jacob Kipp, of the town of Nassau, to consult with Dr. Bassett on the case of his servant girl, who, he said, was in a deplorable situation. I immediately repaired to his house, and found the patient to be a girl fourteen years of age, one-fourth black. She had a firm pulse, and complained of little or no pain. Dr. B. informed me, that she had a wound in her abdomen, near the centre of the epigastric region, from which he had extracted a full-grown fœtus, that was in part protruded, together with a considerable portion of her intestines. The placenta having two umbilical cords attached to it, he had re-

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* Philadelphia Journal of the Medical and Physical Sciences, No. 3.

moved from the same orifice, and had also introduced his hand into the uterus per vaginam, &c.

On examination, I found an irregular incision of about four inches in length, extending in a diagonal direction, as respects the abdomen, about two inches above the umbilicus, and an incision of about two inches in length at nearly a right angle with the former, extending toward the sternum. The lower part of the abdomen was considerably distended with blood.

Our attempts were in the first place directed to the evacuation of the blood contained in the abdomen, which was partly effected by a change of posture and slight compression. We then brought the lips of the wound in contact by the interrupted suture, dressed it with lint spread with emollient unguent, and secured the whole with a broad bandage. After administering an anodyne, we left her for the night. I did not see her again, but was informed by Dr. B. that she never had any very *violent* symptoms.

The second day he bled her, gave her a cathartic, and pursued the antiphlogistic regimen a few days, when the febrile excitement subsided. An ordinary use of tonics was then resorted to, and in a few weeks the patient was perfectly recovered.

The circumstances attendant on the infliction of the wound were these. While the family was at dinner, she went a distance of perhaps fifty rods from the house, and placed herself on a snow-drift, near a fence, where she was first discovered by her master in the act of covering something with snow, which afterwards proved to be a naked child. As soon as she perceived that she was observed, she immediately ran to the house, with the second child hanging out at the wound, together with a considerable portion of her intestines; laid by her razor and large needle, which were the instruments she had previously prepared for the operation, and shortly began to complain.

I should judge from the appearance of the blood upon the snow, there being three several places where she evidently stopped, that the incision was made *immediately* preceding the

rupture of the membranes, and that the first child was delivered *per vias naturales*, the third pain after the rupture.

As some of the greatest discoveries in every department of science are made by accident, or without any particular previous design, may not the conduct of this desperate girl give a useful hint for an improvement in the Cæsarean operation, consisting in a division of the uterus diagonally, near the fundus, instead of the ordinary method?

Observations.

The editors have given the history of the above remarkable case precisely in the language in which it was forwarded to them. They are indebted to the Medical Society of Rensselaer county, in this state, for the communication, and with the view of giving the greater authenticity to it they have published their proceedings on the same.

"At the semi-annual meeting of the Rensselaer county Medical Society, convened at Troy, (N. Y.) January 14, 1823:

"*Resolved*, That the Secretary be requested to transmit a copy of the report of a case of *self-performed* Cæsarean Section, reported this day by Dr. Samuel M'Clellen, President of said society, to the editors of the Medical and Physical Journal, New-York, and to the editors of the New-England Journal of Medicine and Surgery, Boston, and request an insertion thereof in their respective Journals.

ASAPH CLARK, Sec'y."

The following cases, which rest upon good authority, are republished because they present some points in common with the one occurring in New-York.

The case of Alice O'Neal, inserted in the Medical Essays and Observations published by a society in Edinburgh, by Mr. Duncan Stewart, surgeon in Dungannon, in the county of Tyrone, Ireland.

"Alice O'Neal, aged about thirty-three years, wife to a poor farmer near Charlemont, and mother of several children, in January, 1738–9, took her labour-pains; but could not be delivered of her child by several women who attempted it.

She remained in this condition twelve days: the child was judged to be dead after the third day. Mary Donally, an illiterate woman, but eminent among the common people for extracting dead births, being then called, tried also to deliver her in the common way: and her attempts not succeeding, performed the Cæsarean operation, by cutting with a razor, first the containing parts of the abdomen, and then the uterus; at the aperture of which she took out the child and secundines. The upper part of the incision was an inch higher, and to a side of the navel, and was continued about six inches downwards in the middle betwixt the right *os ilium* and the *linea alba*. She held the lips of the wound together with her hand, till one went a mile and returned with silk and the common needles which taylors use. With these she joined the lips in the manner of the stitch employed ordinarily for the hare-lip, and dressed the wound with whites of eggs, as she told me some days after, when, led by curiosity, I visited the poor woman who had undergone the operation. The cure was completed with salves of the midwife's own compounding.

"In about twenty-seven days, the patient was able to walk a mile on foot, and came to me in a farmer's house, where she showed me the wound covered with a cicatrice; but she complained of her belly hanging outwards on the right side, where I observed a tumour as large as a child's head; and she was distressed with the *fluor albus*, for which I gave her some medicines, and advised her to drink the decoctions of the vulnerary plants, and to support the side of her belly with a bandage. The patient has enjoyed very good health ever since, manages her family affairs, and has frequently walked to market in this town, which is six miles distance from her own house."—*Essays*, vol. v.

From Moseley on Tropical Diseases.

"In the year 1769, a negro woman (belonging to Mrs. Bland, a midwife,) at Mr. Campbell's grass plantation at the Ferry, between Kingston and Spanish Town, in Jamaica, being in labour, she performed the *Cæsarean operation* on her-

self, and took her child out of the left side of her abdomen, by cutting boldly through into the uterus.

"She performed this operation with a butcher's broken knife, about two inches and a half long—the part which joined to the handle. The position of the child was natural; she cut through near the *linea alba*, on her left side, and cut into the child's right thigh, which presented at the part, about three lines deep, and two inches and a half long. The child came out by the action of its own struggling. A negro midwife was sent for to her, who cut the navel cord, and freed the child; and returned the part of the navel cord adhering to the placenta, and a considerable portion of the intestines also, into the abdomen, which had come out at the wound with the child.

"The surgeon who attended the plantation was sent for, a few hours after the accident happened; and judging, from the situation in which he found her, that some dirt had been put into the wound, by the old midwife, with the intestines, he cut open the stitches that had been made, and carefully washed the parts clean, extracted the placenta at the wound, and then stitched it up again.

"On the third day after she had recovered from her low state from the loss of blood, which was considerable, a fever came on, which was removed by cooling medicines; she then took bark for ten days. The wound was fomented and dressed properly, and was soon cured; and the woman was well in six weeks time from the accident, and able to go to her work.

"The child died on the sixth day, with the *Jaw-falling*, as it is called; but came into the world healthy and strong.

"The woman continued perfectly well, menstruated regularly, and was with child again a year or two afterwards.—She attempted the same operation again; but was watched and prevented, and had a regular and proper labour. She had borne three children before this affair, all with natural and easy births. She was an impatient and turbulent woman, whose violence of temper was the only cause assigned for her conduct."

Art. V. Diagnosis *of* Plague *and* Yellow Fever. By P. S. Townsend, M. D. of New-York.

It was long ago remarked, and has since been confirmed by repeated observations, that the matter of febrile contagion becomes powerfully concentrated, and acquires increased intensity, when confined in those substances which have the power of absorbing or retaining it. These I shall mention by the general name of fomites, though that word usually has a more limited acceptation. As the contagious matter under this form is not only augmented in virulence and activity, but may be with facility preserved and transported to great distances, without undergoing any material modification, we ought not to be surprised, that both plague and yellow fever, and especially the former, are more frequently introduced by fomites than through the medium of morbid emanations from the living body, which from their fugacious and unconfined state, must be constantly subject to alteration, dispersion, or decomposition. Hence the door is opened to imposture and misrepresentation, and hence the garbled statements and obscure and contradictory testimony which so often embarrass us in our attempts to detect the mode in which those diseases have been introduced. The natural difficulties which belong to these investigations are rendered formidable by the veil which cupidity and chicanery interpose to conceal or misinterpret the truth.

Those obstacles, however, are much more frequently encountered in our researches into the origin of plague than of yellow fever. For the virus of plague being of a nature so extremely susceptible of alteration under an elevated temperature, that it cannot subsist except in the milder latitudes of the temperate zone, is almost invariably propagated under this form. For this reason also the plague has never been known to appear within the boundaries of the tropics. Hence the frightful havoc which the mortality of the disease, disseminated by the co-operation of this virulent medium, always

produces in those places into which it has been carried. We thus learn too why the plague, though usually confined by the intimate relationships of commerce to maritime situations, spreads also when not circumscribed by quarantine restrictions, into the interior towns, as well as along the sea-ports of Europe. The peculiar properties of the virus of this pestilence explain, likewise, why the system of expurgation, applied to infected cargoes, clothing, furniture, and other articles, has been found the most certain and efficacious method of preventing the introduction of this disease, and together with the system of seclusion and prohibition of personal contact, one of the most powerful instruments in arresting its progress.

On the other hand, the contagion of yellow fever is capable of sustaining a high temperature, without parting with its power of reproduction. By this property it is readily diffused in the air, and becomes amenable to all those chemical and mechanical changes to which that element is exposed. Thus in an atmosphere impregnated with human effluvia, it finds a convenient and rapid medium of propagation, but when exposed to an atmosphere uncontaminated by these impurities, becomes entirely innocuous.

I have elsewhere said, that the virus of yellow fever is less volatilizable than that of plague;* by which I meant to be understood, that when rarefied it does not, like that of plague, lose its power of propagation. However paradoxical it may at first appear, there is nevertheless much reason to believe that the contagious matter of yellow fever is of a more gaseous or volatile nature than that of plague. For while yellow fever is totally and immediately destroyed or decomposed in a freezing temperature, plague has been known to extend its ravages through the dead of winter, and when the surface of the street was covered with snow.† Both, therefore, are re-

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* Account of the Yellow Fever in New-York in 1822.

† "It is but a few years since the mortality by this disease at Constantinople exceeded 2000 daily, and at that fatal period the streets of

stricted within a given range of the thermometer; but that of plague being at the lower extreme of the scale, the form or condition in which its virus most naturally exists, and in which it possesses most activity, is probably that of a fluid, being, however, like many other fluid substances, subject to volatilization, or perhaps decomposition, by very slight accessions of temperature. This is strengthened by the fact, that plague is rarely or never communicated except by direct contact with the human body, or with the infected fomites. The contagion of yellow fever, partaking then in its natural state, of the character of a gaseous substance, cannot perhaps be reduced to the more concentrated form of a fluid, by any temperature above that of congelation, at which point we know it undergoes decomposition, or, to speak with more caution in the present uncertain state of our knowledge on this subject, becomes inert. If our assumptions be true, we are provided with a clue to many of those phenomena attending the introduction and progress of yellow fever, which have hitherto been thought inexplicable. Thus the natural uniform condition of this virus does not prevent it from adhering to and becoming entangled and secreted in fomites, favoured perhaps by some certain affinity for such substances, or by what will, in all probability, ultimately be found to be true, that its specific gravity is greater than that of atmospheric air. Now to make a parallel case to what often does happen, when yellow fever is introduced or propagated under this form, let us suppose these substances to be exposed to free ventilation, to immersion in some fluid, or to a high degree of heat. The result would be, that in the first instance, the gaseous matter would be more or less driven off by the mechanical impulse of the air. In the process of immersion it would, probably, be entirely expelled, while, by the application of caloric, its rarefaction and consequent dispersion would be also effectually accomplished. Thus it happens, that although fomites in

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that capital were covered with snow." Tully on the Plague of Malta, Corfu, &c. p. 18. The plague prevailed also at Moscow during the winter of 1770. Vide Mertens,

the form of infected clothes, closely confined in trunks or chests, or in that of bales and boxes of merchandise, or other articles shut down under the hatches of vessels, have, by the mechanical concentration, confinement, or compression of the poisoned air with which they are imbued, occasioned, when opened, great mortality to those exposed to it, yet it is obvious from what has been said, that this state in which the virus is occasionally found, and which is that indeed under which it is most usually introduced, is more the result of accident than the natural tendency or form which it assumes. At least we may with safety say, that allowing this association to be caused by some natural affinity of the gaseous virus for such substances as we have mentioned, it is by its morbility exposed, as we have seen, to too many contingencies, and too subject to modification, often to become an efficient cause of the introduction of the disease. Hence the reason why, notwithstanding our proximity to the tropics, and the unlimited intercourse maintained between the sea-ports of the union and those places in which the disease is indigenous; and notwithstanding also the annual importation of the disease into our lazarettoes, and that our atmosphere and other circumstances so often favour its propagation, the disease is but seldom introduced into our cities; and that when introduced it is, unlike plague, exclusively restricted to sea-port towns.

We are thus enabled to comprehend also why the morbid emanations from those who labour under the disease in spacious ventilated chambers of hospitals, so rarely transmit the contagion to physicians and attendants upon those institutions.

And the reason also why insulated individual cases in uninfected parts of a town have rarely contaminated sufficiently the surrounding atmosphere, to spread the disease, unless some extraordinary predisposition existed in those who visited or attended them. While on the other hand we learn, by this same facility with which it is disseminated in the air, how this element when infected to a certain degree, by an aggregation of sick persons, within circumscribed limits, becomes one of

the most powerful, rapid, and dangerous vehicles for propagating the pestilence.

The fact that the virus of yellow fever, unlike that of plague, cannot be conveyed in the form of fomites, unless such articles are shut up from the external atmosphere, together with the probability that the yellow fever is of a gaseous nature, are sufficient to show that the contagion in such cases is not, as some suppose, a concrete matter dissolved in or associated with the excretions with which such fomites are impregnated, but contained in the air which they enclose in their pores or spongy texture.

As the contagious poison of yellow fever, therefore, is peculiarly prone to assume the aeriform condition, while that of plague exists perhaps only in the state of a fluid, it is by no means strange that the Egyptian pestilence, possessing as it does the more concentrated and virulent medium of reproduction, should prove to be more sudden in its attack and developement, and more mortal in its termination than the virus of yellow fever.

This parallel between these two different forms of contagion affords us the consoling assurance, that the severe extremes of heat by which our summers are contradistinguished from corresponding latitudes of the eastern continent, together with our remote position from those countries whose equable temperature is so much more congenial than ours to the propagation of plague, will constitute a formidable barrier to the introduction of the disease into this part of the world. And though plague is capable of propagating itself in a low temperature, it is not improbable that the extreme cold of our winters may likewise help to protect us from the visitation of this calamity.

The peculiar laws distinguishing the contagion of plague and yellow fever, will be found to serve as a guide in the prosecution of those measures which are intended to arrest the progress of those diseases in places where they are unfortunately introduced.

Those quarantine restrictions which have been proved most effectual in controlling or exterminating the plague, are founded on the principle of SECLUSION.

Those on the contrary by which the propagation of yellow fever is arrested, are founded on the principle of DISPERSION.

In the former case, the infected places are environed with cordons of troops; each habitation is turned into a temporary prison, the occupants of which are precluded the privilege, under any pretence whatever, of leaving their homes; to execute which measure with more certainty, guards are made to patrol the streets, and persons employed to supply the incarcerated inhabitants daily with provisions, and to bolt and bar the doors at night in order to prevent their escape. Under this martial discipline personal communication and contact with the infected or suspected is effectually intercepted, and the disease almost instantaneously annihilated.* The great object in view in contracting the boundaries of this disease, is to prevent as much as possible the dispersion of the population. For the pure air of the country does not destroy or neutralize the poison of plague, and every individual, therefore, who flies for security into the interior, carries with him the seeds of the disease, and endangers the lives of those who give him shelter.† That the virus of plague is not acted upon or diffused through the air is manifest from the fact, that those who are appointed to guard and provision the inhabitants, and to escort the sick and dead bodies and infected articles to the

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* For more ample details on the subject, I beg leave to refer the reader to the work of Sir Arthur Brooke Faulkner, M. D. on the late plague at Malta, and also to that of J. D. Tully, Esq. on the plague which recently prevailed in the Ionian isles. The efficacy of this system, perfected under the administration of the British government, was on those occasions fairly put to the test, and demonstrated beyond the possibility of refutation.

† In the instance of the village of Curmi in the plague of Malta, the inhabitants proving refractory to the prohibitory measures which had been adopted, were, in addition to cordons of troops, surrounded also by a temporary wall.—Tully.

lazaretto, depôts, and burial-grounds, though approaching within a few yards or feet to the objects which they are superintending, have almost universally escaped; while the sorzas or convicts, who were compelled by law to remove and handle the dead, the expurgators of infected goods, and the attendants upon the sick, too often perished in the noble and hazardous vocation in which they were engaged. How different is a scene like this from that which is presented in cities visited with yellow fever! Here the picture is gloomy and desolate indeed. The affrighted population have learned, from too many mournful lessons, that their only safety is in flight. A poison which is borne on the wings of the air soon enlarges its dominion. Not only the houses of those parts of the town into which the disease has been introduced, are totally abandoned, but for better security those also which stand on the confines of the infected district, in order to encircle the diseased neighbourhood with a zone of pure air, broad enough to resist the assaults of the pestilence and to weaken or destroy its virulence, when it shall have arrived at this boundary. The more the fugitives are scattered and dispersed, the less the danger, for the pure country air soon dissipates or decomposes the poison which they may carry in their persons or effects. No impediments are thrown in the way to obstruct their retreat, but every facility given to depopulate as expeditiously as possible every part of the city in which the disease may be supposed to lurk.

The history of the two last visitations of yellow fever with which New-York has been afflicted, viz. 1819 and 1822, proves that dispersion is the most powerful engine for combating this disease with which we have hitherto been made acquainted. It has been found also, in correspondence with the view we have taken of the nature of this contagion, that little danger is to be apprehended from the furniture, clothing, bales of merchandise, or other articles, removed from infected to uninfected places, provided such articles do not constitute the actual apparel or bedding of those who have died of the disease. Hence the system of expurgation applied to ships,

houses, cargoes, or furniture, is found to be of little or no avail in arresting the propagation of yellow fever. There is in this disease generally more danger to be dreaded from the persons of the sick, than from any other cause, for if these be congregated together, they will inevitably become new foci of contagion, in which manner yellow fever, like other contagious diseases, may be propagated to an indefinite extent.

Having thus expressed our opinions of the nature and laws of those occult substances by which yellow fever and plague have been empowered with the faculty of perpetuating their existence, and to the instrumentality of which are to be ascribed the accumulated miseries which these appalling engines of death have from age to age inflicted upon different portions of the human family, I shall proceed now to institute a parallel between the symptoms of the two diseases.

It may be thought presumptuous in one who has no personal experience in plague, to attempt a task of this description. But there are very few or none to whom opportunities have occurred of studying both these diseases. If we were to wait, therefore, for such a contingency, all inquiries on this subject would come to an end.

There is, however, another object which I have in view, and which induces me to claim, on this occasion, the indulgence of a hearing. It is to rebut the errors imposed upon public credulity by certain American writers, who, without having had any opportunities to learn the nature of plague, and whose practical knowledge of yellow fever is also extremely limited, have nevertheless undertaken to say, that plague and yellow fever are one and the same disease.

The want of preliminary education, and of that habit of close investigation which the mind acquires, when its unfolding germs are subject to the discipline of a sound and systematic course of instruction, has often been urged in extenuation of those crude and unphilosophical opinions which have too often disgraced the medical reputation of our country. This cause has, doubtless, its full share in retarding the advance of medical science. But it is an evil of trifling magnitude, com-

pared with a certain dangerous hypothesis, under whose banners the great majority of American physicians have, we lament to say, voluntarily consented to enlist their suffrages and talents. It is, indeed, a melancholy reflection, that the tenets of that doctrine which professes to maintain the domestic origin of yellow fever, and its unity with almost every other form of disease, has tended more than any other cause to corrupt the channels of information, and to bewilder and unsettle the principles of medical philosophy. It would be some consolation to know the consequences, if this evil extended no further. Shall I not, then, be pardoned in calling that conduct criminal, the tendency of which is not only to overturn the fabric of medical reasoning, but to involve in indiscriminate ruin some of the most vital interests of the community? Time will not repair the disasters which this error has occasioned, nor wipe away the stigma with which it has deservedly branded the profession.

It is still a subject of contention in pathology, whether plague be a general or local disease. The most approved medical authorities of the present age, however, concur in the opinion that it ought rather to be denominated a local affection, than a disease of the whole system. Among these, I may mention Sir Arthur Brooke Faulkner, M.D., whose late work on the plague of Malta, together with the examination of that gentleman before the House of Commons on the subject of the contagious nature of plague, furnishes one of the best digested and most lucid accounts of its peculiarities and laws which has fallen under my notice. Dr. Faulkner places plague, with Cullen, among the Exanthemata. That it is an eruptive disease, is the obvious deduction which any person would form, in reading a description of its symptoms.

The disease appears to be located in the teguments of the body, affecting that tissue by tumefaction of its glands and lymphatics, or by the eruption of carbuncles. These are not adventitious symptoms. Dr. Faulkner informs us, that out of the whole number of cases of the plague of Malta in 1813, (in which 6000 perished,) *two-thirds* were affected, more or less,

with inflammation or tumefaction of the glands or lymphatics. Of buboes and carbuncles, the former appear to be more constantly present than the latter. Buboes are not, as this writer judiciously observes, an effort on the part of nature to expel pestilential matter, because their retrocession is often perfectly harmless, and because they often appear at the very commencement like an eruption of measles and small-pox, without being preceded by the least degree of fever. They are not critical separations. It is, as he also remarks, extremely probable, that they are often prevented from becoming developed, by the rapid termination of the disease, in which respect we may observe that they resemble the yellowness and black vomit of yellow fever.

To say nothing of those cases in which carbuncles appear when buboes do not, the frequent occurrence of the latter shows that the two together form the most essential, primary, and pathognomonic symptoms of the disease; and that the inference, from these facts, that plague is an eruptive local disorder, is much better supported than that which has given the name of vomito prieto and of gastitis to yellow fever, from the local affection of the stomach.

Many strongly marked characters of the contagious eruptions belong to plague. The buboes of syphilis, and the pustules of small-pox, serve as powerful analogical arguments to prove the local nature of the plague. The regularity, also, of the febrile affection, in plague, leads me to conclude that this ought rather to be deemed symptomatic of the local complaint, than as a constituent element of the disease, or as possessing any peculiar or definable type. The pyrexia of plague has neither the regular stadia of yellow fever, which form so striking a feature of this disease; nor has it the paroxysms of an intermittent. So indefinite are the febrile phenomena which the disease assumes, that many writers confess themselves totally at a loss how to describe them. In proof of this observation, we may remark, that Sir A. B. Faulkner divides these phenomena into three separate classes or forms, all of which varieties differ by as broad outlines from each other,

as the type of one species of fever differs from that of another. Russel also notices this peculiarity of plague. That the plague is a local disorder, and the constitution merely symptomatic, is furthermore confirmed by the analogy of the fever of measles, small-pox, and scarletina.

If also it may be true that the plague may, like small-pox and syphilis, be communicated through the medium of the bubonic or pustular matter, it is an additional evidence in favour of its being a disorder purely local.

Plague, being then a local disease, is, by this general principle alone, separated by a broad line of demarkation from yellow fever, which on the other hand is unusually acknowledged to be a disease of the whole system.

A more particular examination, however, of the symptoms and circumstances, in which these two diseases agree or disagree, will place this diagnosis in a point of view too clear to admit of the least ambiguity.

The following are the only points of resemblance between plague and yellow fever:

1. Dulness and suffusion of the eye.
2. Præcordial irritability.
3. Period of developement.
4. Petechiæ and livid discolorations.
5. Contagious.
6. Unaffected by the ordinary vicissitudes of the atmosphere.
7. Unchanged by the influence of soil, situation, or condition of life.*

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* There are several occasional or subordinate symptoms, which occur both in plague and yellow fever, as well as in many other diseases; such, for example, as visible pulsation of the carotids, [vide Howard on Lazarettoes, p. 56, 7], eruption of boils, convulsive motion of the limbs and continued trembling of the hands, [very common in plague, vide Russel, but rare in yellow fever], tremor of the lips, [common in plague, vide Dickson, but rare in yellow fever], also impediment of speech, and tremor of the tongue, [frequent in plague, vide Russel, p. 83, rare in yellow fever.]

The specific and idiopathic character of plague may be known by placing together those circumstances and phenomena peculiar to plague and not to yellow fever, and those, on the other hand, which belong to yellow fever, but which are wanting in plague.

In Plague:—

1. Irregular febrile action.
2. Constricted hot skin.
3. Buboes and carbuncles.*
4. Chalky white fur on the tongue.
5. Emetics useful.
6. Northern constitutions least susceptible.†
7. Incommunicable in the tropics.
8. Prevails in a freezing temperature.
9. Progress of the disease arrested by *Seclusion.*

In Yellow Fever:—‡

1. Regular stadia of high continued excitement, followed by sudden abatement of heat and arterial action.
2. Moist skin in the stage of collapse.
3. Red inflamed eyes in the first or inflammatory stage.
4. Clear red margin on the tongue.
5. Yellowness of the eyes, skin, and tongue, in the stage of collapse.
6. Sighing.
7. Black vomit.

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* Carbuncles have been seen in yellow fever, but their occurrence is so rare, that they must be considered as altogether anomalous. The frequent change of posture and extreme anxiety and inquietude are noticed by Russel among the symptoms of plague. In yellow fever they are also sometimes observed just before death, but the supine position is that which peculiarly characterizes this disease.

† It was observed of the English at Malta, that they almost invariably escaped the disease.—Faulkner.

‡ Chisholm has undertaken to show that the plague of Athens, as described by Thucydides, bears a close affinity to yellow fever; but afterwards admits, that there is a clear and obvious line of demarkation between the two diseases. See his letter to Haygarth, pp. 117, 8—148 et seq.

8. Hickup.
9. Hemorrhage from the nose, mouth, &c.
10. Emetics contra-indicated.
11. Northern constitutions most susceptible.
12. Prevails in the tropics as well as in the temperate zone.
13. Destroyed by a freezing temperature.
14. Progress of the disease arrested by *Dispersion.*

Though the period of developement in plague is like yellow fever, limited to six or seven days, this period, as well as that of duration, are frequently much more rapid than has ever been observed in yellow fever. Cases have repeatedly occurred in plague, in which death has ensued in three hours after exposure to the contagion. It has a remarkable similarity in this respect to the rapid extinction of life from the bite of certain venomous animals within the tropics.

The præcordial irritability enumerated among the symptoms of plague is not constant, and cannot be a circumstance of any great moment, or at least is totally different from the gastric affection of yellow fever,* as is proved by the fact, that emetics are constantly had recourse to in plague, and are frequently found beneficial, whereas in yellow fever they are certain to aggravate the disease, and to hurry on the fatal symptom of black vomit. Instead of vomiting or excessive gastric irritation, there is often bulimia in plague, especially in convalescence, so that the tone of the stomach seems rather to be invigorated than impaired by the disease.

The coldness and moisture of the skin are also strongly marked symptoms of yellow fever, as also the inflamed eye and the yellow tinge which afterwards suffuses itself over that organ, and upon the surface of the body; but plague is wanting in all these prominent symptoms. Assalini is the only au-

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* Notwithstanding that extreme anguish and pain at the heart and scrobiculus cordis, and burning and oppression at the præcordia, are enumerated by Russel among the symptoms of plague, he admits that *vomiting* was absent in a large proportion of the sick, p. 92.

thor, I believe, who has spoken of an inflamed conjunctiva as one of the symptoms of plague; but as the plague which he describes occurred in Egypt, this symptom was connected probably with the endemic opthalmia of that country.

Nor do we hear any mention made in plague of black vomit, or of hickup, nor of bleedings from the mouth and nose,* those graphic and appalling features which give to this disease an aspect so terrific, that who ever has seen them, never afterwards fail to recognise it.†

If the exposition which has been given of the peculiar laws governing the contagion of yellow fever and of plague, be taken in connexion with the leading principles on which are founded those regulations, which are intended to exclude the introduction or control the progress of the two diseases; and if, in addition to this, we bear in mind the particular position which each disease occupies in the system, and the remarkable symptoms by which each is characterized; no one, according to our judgment, ought for a moment to doubt that the Egyptian and American pestilence are as totally unallied to each other, as any two diseases in the nosological calendar.

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* Russel mentions hemorrhages from the nose and uterus in plague. They occurred however but seldom; and those from the uterus occurred only in pregnant women, being usually the concomitants of abortion.—P. 161. The same author observes, that he had sometimes seen blood discharged by stool, but that he had never, in all his experience, seen bloody urine or vomiting of blood, though these symptoms are found in some authors. In some few cases, however, he remarked a blackish liquor thrown off from the stomach just before death. P. 80, 93.

† "At a first glance," says Johnson, "the yellow fever and small-pox would seem immeasurably separated, and widely distinct in every respect; yet the plague presents as fair a connecting link between them as the polypus does between the animal and vegetable kingdoms." P. 151. However elegant this fanciful similitude may have seemed in the eyes of Dr. Johnson, it is altogether unsupported by fact or argument.

Art. VI. ***Case of Delivery of an*** **Arm-Presentation,** ***by what is called "Spontaneous Evolution," with reflections on the manner in which nature effects the delivery, &c.*** **By Thomas Cock, M. D., and James M. Pendleton, M. D.**

Case. On the morning of June 9th, 1822, I was called in a great haste, to visit Mrs. Carberry, who was in labour, and where some difficulty occurred, which the midwife in attendance did not know how to remedy. I found the patient with some excitement; labour pains had ceased a short time before I arrived. I learned that labour had commenced during the night, and that the membranes had broken early. On examination, I found the right arm projecting beyond the external parts as far as the elbow. As there were no pains present, I determined to attempt turning the child; and for this purpose, I cautiously introduced my hand into the uterus, and pushed the arm up before it; but all attempts to turn the child proved ineffectual. I ascertained that the head was on the right side of the uterus, the extremities in the left, and the belly of the child toward the abdomen of the mother. I requested Dr. Helme, who came in whilst I was occupied with the case, to try if he could get at the feet; this he did, but without effect. As the patient was in a confined cellar, in an extremely hot day, I directed her to be sent to the hospital. She now came under the care of Dr. Cock, who gives the following history of the case, after he took charge of it. "I directed her bowels to be opened by an enema, and a large opiate to be given, concluding it would be necessary to turn the child. I saw her again at three o'clock, when the pains were more severe, and directed one hundred and twenty drops of laudanum to be given, preparatory to the attempt at turning. Soon after the medicine was given, one of the young gentlemen came from the lying-in room, and informed me that the arm was protruding further. I made an examination, and found that the lateral parts of the child were presenting at the dilated os tincæ. I observed to one of the gentlemen, that this

would prove a case of spontaneous evolution. The pains continued to act with great force, when the lateral part of the abdomen became protuberant, and I was sensible that a doubling of the child was taking place. This proceeded so far, that, with little difficulty, I passed my fore-finger into the groin, and brought down the right inferior extremity. The breech and the other extremity soon followed, and the delivery was readily accomplished. During the whole of these changes, the arm preserved its position, and was not in the least retracted, nature effecting the delivery without regarding the first presentation. The child had the appearance of having been dead some days. The recovery of the mother was retarded for a short time by a severe pain in the hip, which yielded to anodynes and a blister."

Two reflections naturally arise from a perusal of the foregoing case. First, in what manner nature effects the delivery under such embarrassing circumstances? And secondly, how far, in similar cases, we may safely trust to nature to accomplish the expulsion of the child? To Dr. Denman is due the credit of directing the attention of the profession to this important change: the first account of it was published by him in the London Medical Journal, vol. v. for 1785. He there denominates it the "spontaneous evolution of the *fœtus*." By this term, he meant a change in the relative situation of the fœtus, produced by continued and powerful contractions of the uterus, by which the head was raised toward the fundus, the arm retracted within the uterus, and breech presented to the os tincæ, and the child expelled. How far the cases which came under the observation of Dr. Denman may have authorized this, we cannot pretend to say; but the case which we have related, and numerous others recorded since his time, cannot be explained by it. Independently of the inadequacy of this view to account for the phenomena which presented themselves, it is liable to many other objections, which alone might be sufficient to make us pause before we implicitly adopt it. At the moment in which this change in the situation of the fœtus is said to be effected, the uterus is in powerful action, and

pressing equally on all parts of the child; consequently, no other change can be effected, but that of propelling the child forward. There must also be a relaxation of one set of muscular fibres, to receive the head, whilst another set are acting on the extremity, to raise it to the fundus. The phenomena which presented themselves in the case that we have detailed, militate strongly against Dr. Denman's view; the retraction of the arm, which must necessarily follow the change in the situation of the fœtus, did not take place; on the contrary, it remained projecting, nor could its return be effected, after repeated and careful attempts, under every variety of circumstances that could in any manner facilitate it. The part which presented with the arm, was the lateral portion of the abdomen, which distended the perinæum until the right extremity was so far disengaged, that it could easily be drawn out, when the other parts quickly followed.

On reviewing, therefore, these circumstances, we should rather say, that, by the powerful and long continued uterine contractions, the child (which is generally destroyed) is doubled up, and gradually protruded, until the breech and extremity become expelled, and are followed by the body and head.

The two following cases strongly corroborate this view of the subject:

Case I. This case occurred to Dr. Gooch, physician to the Westminster and London Lying-in Hospitals, and is related in the Medical Transactions of the College of Physicians in London.

On the 24th October, 1819, Dr. Gooch was summoned to a woman, who was in labour with her first child. The membranes broke, and when the action of the uterus came on, an arm protruded, the shoulder passed under the arch of the pubis, and the thorax pressed with great force against the perinæum. In order to ascertain what would become of the arm, in the spontaneous expulsion which he expected would take place, he laid hold of it with a napkin, and watched its movements. Instead of returning into the uterus, he found that

at each pain it protruded further, whilst the thorax was distending the perinæum, until the side of the chest, abdomen, and breech, were expelled. The head soon followed. The child bore marks of having been dead some time.

Case II. In No. I. of Vol. X. of the New-England Journal of Medicine and Surgery, is related the following case of arm-presentation by Dr. J. Bigelow. A lady found herself in labour with her sixth child, at about a quarter before six in the morning. She had had slight preparatory pains for twenty-four hours, but the first pain which she considered serious, ruptured the membranes. I saw her about twenty minutes after this happened. On examining the os uteri it was found considerably dilated, and the left elbow of the child projecting into the vagina. I immediately resolved on turning, but when the attempt was made, the waters being evacuated, the uterus closely investing the child, and the mouth not being fully dilated, nor readily yielding, every effort at introducing the hand was attended with great pain and difficulty; rendering it obvious that turning could not be effected without extreme violence. Dr. Jackson was now called in consultation, and, after due examination of the case, and attendant circumstances, it was thought best to entrust the expulsion of the child to nature. By degrees the shoulder was forced down, the acromion presenting, and at length the arm was expelled with the hand toward the *sacrum*. The pains now became very strong, but no alteration was felt for some time, except that the shoulder passed forward, and finally lodged against the arch of the pubis, the arm turning forward and upward. Gradually the integuments of the side under the axilla began to form a protruding tumour, which was felt to increase in size with every pain. The external dilitation was great, and the perinæum a good deal distended. The left half of the abdomen was now expelled, and almost immediately after, by a continuance of the same pain, the pelvis and inferior extremities. So much sooner did this last part of the process take place than was expected, that I am not able to say if the pel-

vis came sideways, or with the sacrum first. My attention at the moment of delivery, was directed to observe the shoulder of the child, the arm being held by one hand with the finger on the acromion, while the perinæum was supported by the other. At no time was there the least appearance of the shoulder receding; on the contrary, it was rather forced downward than upward, at the moment when the lower half of the body was passing the perinæum. It only remained to liberate the arm and the head which soon followed. The umbilical cord had been partially excluded from the body during the last hour of the labour, and, for the greater part of the time, was without pulsation. Attempts to resuscitate the child proved ineffectual.

The labour lasted just four hours after the rupture of the membranes. The pains were not so violent as to have excited any surprise in a case of natural labour. The mother has since done perfectly well. It is proper to add, that the pelvis in this case, was peculiarly well formed, and the child weighed about seven pounds.

How long we are to wait in expectation of this natural expulsion, before having recourse to instruments, is a point of no ordinary importance to be determined, as the life of the mother is intimately concerned in it. The propriety of immediate turning, when present at the rupture of the membranes, admits of no doubt, as it is attended with comparatively little danger to the mother, and is the means of saving the life of the child; but when called after the membranes have been long ruptured, the uterus closely contracted around the body of the child, the arm and shoulder compacted under the arch of the pubis, and the extremities high up in the fundus of the uterus, an attempt to reach the feet is attended with so much difficulty and hazard to the mother, that the practice is now entirely abandoned: in this unfortunate case we have but the choice of two modes; the one to separate the head from the trunk of the child, and evacuating the contents of the thorax and abdomen, deliver by the crotchet; the other, trusting to

nature to effect the delivery. In the first case, the necessary destruction of the child, (which has been expelled alive in some cases, by the contractions of the uterus,) the danger to which the mother is exposed, from the introduction of instruments, and the difficulty of the operation itself, are strong objections to this mode, unless absolutely unavoidable. To the second it may be objected, the danger of inflammation of the uterus and soft parts, from the great distention to which they are exposed. In the case, however, quoted above, this did not take place, and they were delivered with scarcely more danger than in natural labour. An objection of still greater weight is raised, that we may be disappointed in our expectations after waiting for this natural expulsion, and the pains becoming weaker, the danger to the mother be very much increased. On this subject Dr. Denman says, " but although the evolution was not effected, I have not found this consequence ; for the child, though not expelled, has been brought into such a state, that afterwards I could often pass my hand with ease, and bring down its feet, though in an attempt to do this in the beginning of labour I had been foiled." Again, "in one case in which the evolution did not take place, I could not bring down the inferior extremities, but I had no difficulty in fixing an instrument upon the curved part of the body of the child, or in bringing it away with entire safety to the mother. We shall not attempt to decide upon the propriety of either mode in all cases : this must be determined by the peculiar circumstances of individual cases. The cases mentioned above will, we hope, direct the attention of practitioners to this important subject, and, in conjunction with more extended experience, furnish data for a correct decision of this difficult question.

Art. VII. *A* Statistical *and* Medical Account *of the* Genesee Country, *in the State of New-York.* By Edward G. Ludlow, M. D. of New-York.

Topography of the Genesee Country. (N. Y.)

Genesee is an Indian term, signifying *Pleasant Valley*, given to the country near the river of the same name. Its bounds are not very clearly defined, being sometimes extended to all that part of the state of New-York lying west of Utica, but more generally restricted to that portion west of a meridian passing throughout the N. W. corner of Seneca lake.—The country lying west of Utica is, in its general character and most prominent features, so much identified, as to admit of being taken under one review, and, therefore, the whole will be considered under the following brief notice:—

South by Pennsylvania, .	Lat. 42° N.	
North by lakes Erie and Ontario, Salmon River, &c. . .	43° to 43°.30′	
West by Triangle in Pa. and Sts. Niagara, ...	2°.30′ to 3° W. Lon.	From Washington.
East by meridian of Cookhouse, Chenango River, and Rome,	1°.30′ to 2° E.	From Washington.
Extent E. and W. 200 miles N. and S. 85 miles	medium.	
Area,	17000 square miles.	

Population, 255,000, being about 15 per square mile.

Agriculture, which is in a flourishing condition, occupies the mass of the people. The fertility of the country is proverbial. Clay, gravel, and sand, with a deep, rich loam, or vegetable mould, constitutes the superior soil, marl and gypsum are abundantly distributed as substrata. Excellent crops of all the grains, grasses, fruits, and vegetables, common to the northern and middle states, are raised here with ease, and are in great plenty. From the south of the great lakes, there are extensive plains, gentle slopes, waving ridges, and gradual ascents, towards the Susquehannah and Alleghany mountains,

with occasional steep and abrupt precipices, near the lakes and creeks. The term level is often misapplied here; undulation is more proper. The ridges or swells lay parallel with each other, and with the smaller lakes north and south, varying generally from 5 to 10 degrees from the meridian, and to the west of it. The ascents are gentle, and the eastern slopes most valuable. Here and there a hill rises from the general level of the plain to the height of 50 to 150 feet; the highest part is frequently the best soil; isolated eminences deserving the name of mountain rarely occur; they are confined almost exclusively to the vicinity of the dividing ridge.

The country exhibits little or nothing of an Alpine character, and that part of it which forms the Ridge, Roof, or Water Shed, is good land for tillage or pasture; this separates the waters of the Mississippi and Susquehannah from those of the St. Lawrence. Notwithstanding the great length of the streams and rivers which take their rise in this spine, it is believed not to exceed 1500 feet elevation above the level of the Atlantic tides; its course is somewhat tortuous, but its general direction lies east and west, nearly parallel with the Erie and Ontario lakes, and at right angles with the smaller lakes.—This might with great propriety be called the Lake Country, for in this respect Cumberland in England holds no comparison with Genesee. Besides the Erie and Ontario, (which, properly speaking, are *seas*,) there are the Conesus. Hemlock, Honeoye, Canandarqua, Seneca, Cayuga, Owasco, Skaneateles, Otisco, Onondaga, and Cazenovia lakes, lying north and south, and the Oneida, lying east and west, all emptying themselves into Ontario; the Chatauqua and Casdauga lying north and south, discharging their waters by the Connewongo into the Alleghany river. The last mentioned lakes occupy the upper terrace, being, it is thought, about 1350 feet above the ocean. The Cayuga, Oneida, and Onondaga, are in the lowest part of the second or middle terrace, the last (Onondaga) is 350 feet above tide, the others occupying basins of intermediate elevation. The waters of these lakes are pure and pellucid, several are so deep as rarely to freeze over

in winter; the line has not yet fathomed some of them; their shores are in some parts bold, in others shelving, with pebbly or gravelly edges, but near the head generally moist or marshy. They abound in a variety of fish, and afford means of easy communication, which in process of time will doubtless be extended and improved. Viewed in connexion with their variegated and rich scenery, these lakes form an assemblage of objects in the highest degree picturesque, and at no very distant period will draw around them wealth, elegance, and refinement. Associated with interesting events of human life, our lake country would exercise the descriptive talents of Southey, Coleridge, or Wordsworth.

Among the rivers are the Niagara, Genesee, Seneca, and Salmon rivers, besides a great number of smaller streams. Passing over a calcarious soil, the waters of these streams are considerably impregnated with lime.

Among the principal swamps and marshes are the Tonnewanto, Cayuga, Onondaga, Sullivan, Newton, Catharines, and Braddocks bay. As I shall frequently have occasion to refer to these when describing the diseases prevalent in their vicinity, I shall enter into a more particular description of them than would, perhaps, otherwise be interesting.

The Onondaga marsh is situated at the head of Onondaga lake, which is about seven miles in length, and three in its greatest breadth; its water on the surface is perfectly fresh, but at a moderate distance beneath it is salt, as the lake receives its waters from both fresh and salt sources, the solution of this phenomenon is obvious. The famous salt springs issue chiefly from the marsh, near the banks by which it is enclosed, and at various distances from the waters of the lake; some of the principal disembogue in a group near the village of Salina, which is situated on the margin of the marsh. Its inhabitants are principally those concerned in the manufacture of salt, which is here extensively carried on.

During the sickly season, fevers of a highly malignant character are occasionally prevalent—the use of spiritous liquors

as a preventive, predisposing the system to the action of the miasma, which is here copiously exhaled. How far the mixture of salt and fresh water assists in the decomposition of vegetable matter, will be considered in a subsequent part of this essay.

The Cayuga swamps and marshes are of great extent. In the immediate vicinity of them is situated the village of Montezuma, at the north end of one of those parallel ridges previously noticed; when the waters are high it is literally an island, having on the west three miles of marsh, and on the north and east one and a half, comprising in the whole about 800 acres of swamp and 4000 of marsh; here are likewise salt works, with the same causes of disease operating on the inhabitants as at Salina.

The marshes of Braddocks and Irondequot bay are situated at the mouth of Genesee river, where there is a small settlement; they are extensive, and are always partially covered with stagnant water, rendering them during the summer highly obnoxious to those who live in their vicinity. Numerous medicinal plants, whose virtues have been tested, are found in this region, and are much used, especially in those parts of the country where the scarcity or high price of pharmacutical preparations renders it necessary to resort to the less expensive simples of nature; in this way many valuable additions are made to medical botany.

When treating of diseases, I shall briefly notice those which are employed as remedies in fever, and such others as have novelty to recommend them. Chance has done something, science very little in the departments of Geology and Mineralogy, the surface of the earth having been but partially explored.

The district is usually and very properly divided into three sections or terraces. The lower or northern is nearly alluvial, and extends from lake Ontario to the Niagara mountain ridge, which is a perfect mural bank. This terrace is nearly level, and its medium width is about ten miles; the alluvial way or

nature's turnpike, passing east or west through the middle of it, from Niagara river to Sodus bay. Here occur extensive deposits of red ochre, the gypsum formations, and saline fountains. Red sandstone appears on the lake shore, beneath secondary limestone. The middle terrace abounds in secondary limestone, swinestone, bituminous marl, and slate. The southern or upper terrace extends from the smaller lakes southward; it presents a variety of argillaceous earths; the highest hills exhibit specimens of carbonate of lime, containing impressions of testacea; traces of coal and alum are also visible.*

The seasons are generally uniform; winter begins in December and continues until March, of which about two months afford good sleighing. Severe cold seldom lasts more than three days successively, and is followed by soft breezes from the south. The spring generally opens in March or by the first of April; the weather is, however, variable until May. The summer begins regularly in June; in autumn, through September and October, the weather is settled and serene. Westerly breezes prevail the greater part of the year. Easterly winds are of rare occurrence; those from the north are cool and bracing. Southerly winds are very common on the borders of the smaller lakes. Coming from warm latitudes, along the Mississippi and Ohio, they might be expected to bring genial warmth; but, on the contrary, they are humid, and invariably create a sense of chill.

The *temperature* is somewhat variable, but generally moderate, and seldom on extremes for any length of time.

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* About 11 miles to the north of Geneva are situated the Clifton springs. These waters are highly impregnated with sulphuretted hydrogen. When drawn from the spring they are clear, but become turbid when exposed to the air. They are found to be very serviceable in all cutaneous affections, and when heated form a bath highly efficacious in rheumatic complaints, being then similar to the warm sulphureous springs of Aix la Chapelle, Barege, and the baths of Nero in the vicinity of Naples.

The following observations were made during the year 1819, at the village of Geneva, which may be considered as the central climate west of New-York.

Meteorological Observations (mean temperature, 1819.)

	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.
Highest,	58°	58°	50°	77°	86°	94°	92°	91°	87°	77°	57°	46°
Mean,	30	31	28	46	56	68	70	69	63	47	41	30
Lowest,	3	10	7	25	36	52	50	52	44	29	29	7
Winds,	N10 S25 E9 W46			N8 S30 E8 W45			N23 S34 E10 W25			N13 S24 E6 W49		
Weather,	62cloudy 28fair			39cloudy 52fair			38 cloudy 54 fair			53cloudy 39fair		

Geneva is situated at the N. W. corner of Seneca Lake, (which is 438 feet above tide waters at Albany,) in lat. 42° 52′ North, long. 3° West of New-York city, or 77° West of the Royal Observatory, Greenwich, England. To ascertain the mean average of temperature, expressive of the climate, would require a regular course of observations for a series of years. The following may be considered as near the truth: *summer*, 70° to 72°; *winter*, 30° to 32°; *spring*, 40° to 43°; *autumn*, 50° to 51°; *annual, mean average*, 45° to 50°. There can be but little doubt that the clearing of the country has made great changes, both in its temperature and the type of its diseases; but as a consideration of the latter will come more properly under another head, I shall at present waive all further notice of this subject.

History of Epidemic Diseases in the Genesee Country, from the year 1801 *to the year* 1823.

The settlement of this section of the state of New-York began in 1791, and was principally completed in 1804. For the few first years, the settlers were scattered over such an extent of country, that an attempt to characterize the prevalent diseases would be fruitless. I have therefore commenced at a period when they had developed themselves sufficiently to attract the notice of the medical practitioner. The summer of 1801 was warm, with frequent showers; the days were exces-

sively hot, but the nights very chilly. In September and October there was less rain; the days were mild and pleasant, but the nights continued cool. The diseases of the spring and summer months were principally intermittent fevers, which prevailed throughout the country; they were of the tertian type, and were frequently complicated with visceral obstructions, and attended with violent inflammatory action: none were exempt from them except those who had undergone many previous attacks, without having taken any measures to interrupt their course. A strong prejudice existing against all remedies which check the paroxysms: the consequence of this was, that the disease laid the foundation of many incurable chronic affections.

Peruvian bark was then rarely used; though, when properly employed, generally successful. It was given without any previous depletion, even in cases where visceral obstruction existed; it is, therefore, not extraordinary that doubts of its efficacy should have arisen.

In September and October, remittents of a mild form appeared, which continued through November, growing more severe as the season advanced. For the first two or three paroxysms, it was difficult to distinguish intermittents from remittents: the patient was attacked with languor, pain in the head and back, and alternate fits of heat and cold. These symptoms lasted four or five days, about which time a remission commonly took place, often without the aid of medicine. Intermittents and remittents often occurred in the same family, and required similar treatment; an obstinate case of the former being more dreaded than a mild case of the latter. Venesection, an emetic, and cathartic, followed by a few doses of bark, usually subdued the disease by the fifth or ninth day. Occasionally, though rarely, it was more violent, the patient being attacked with a severe cold fit, violent pain in the head and back, delirium, full hard pulse, increased heat, and difficult breathing. These cases, however, were seldom fatal, when depletion, according to the exigencies of the case, was premised. When left to nature, the symptoms became typhoid, and a re-

covery of the patient uncertain. There were also a few cases of dysentery, but not of a malignant character. The small pox occasionally appeared, but was seldom fatal. The vaccine virus had been introduced, but was considered more dangerous than the former. All fevers, except fever and ague, were called by the people *Lake or Genesee fevers.* After November, the country was remarkably healthy, and continued so during the winter.

During the summer and fall of 1802, the diseases were similar to those of the preceding year: the winter was mild and healthy.

1803. As the country became more settled, new diseases appeared, and the preceding ones did not retain their former characteristics. Intermittents, from being simple, became complicated with other diseases, so as to render it difficult to determine their nosological character.

In each succeeding year, it became apparent that intermittents were declining, and continued fevers becoming more prevalent. Diarrhœa was the prevailing disease of the spring. During the summer, there were many cases of dysentery; the symptoms were, however, mild, and none terminated fatally. In autumn, remittents and continued fevers were general, but yielded readily to the usual remedies.

1804. The summer of this year was but moderately warm; the winter was intensely cold for an unusual length of time. A greater quantity of snow fell, and laid longer than had ever been known. Fevers, during the summer of this year, were less frequent than the last. The new settlements, where intermittents and remittents had prevailed the preceding season, were remarkably healthy. In the old settlements, during the fall, there were many cases of remittent. The winter diseases were purely inflammatory, which is generally the case in this country. Cynanche tonsillaris, pleuritis, and enteritis, were prevalent, making the season more than usually unhealthy.

1805. From the equable temperature of the last year, it was expected that the present warm season would be less sickly than those which succeeded open winters, but it was other-

wise. The spring commenced with fevers of an inflammatory nature, which continued until cold weather. The intermittents were complicated with enlargements of the liver and spleen; in most instances, these were sequelæ of the fever, but in others, these organs were primarily affected.

About this time, mercury came into fashion; and in all forms of fever, whether intermittent, remittent, or typhus, without reference to the diathesis, the patients were indiscriminately salivated. In those cases where the liver was diseased, it proved serviceable; but to its abuse, numbers were sacrificed.

1806. There was much rain and warm weather during this summer. The diseases resembled those of the last year, except at Palmyra, where a fever of a typhoid character prevailed. It commenced in December; the symptoms were, great prostration at the commencement of the disease, succeeded by coma, subsultus tendinum, and hiccough. Dissolution generally took place in three or four days, unless the system was supported by powerful tonics. It proved fatal to many. Hoopingcough was also epidemic throughout the country.

1807. The spring was ushered in by wet weather, which continued during the summer with alternations of great heat. The fevers of this year, during the summer months, were purely inflammatory. In September and October, typhoid symptoms supervened early in the disease. The character of the fever varied, however, with its localities. Near streams, and where the current had been obstructed by dams, its symptoms were strongly marked on the attack; whereas in high grounds, its approach was insidious, the patient feeling but slightly indisposed for some days previously; after this the disease suddenly developed itself. These cases were more unmanageable than when the attack was sudden. In July and August a severe opthalmia prevailed. In September influenza was epidemic throughout the country; few escaped an attack, as neither previous nor existing diseases were preventives. It was attended with acute pain in the head and eyes, and sometimes terminated in abscesses in the frontal sinuses. It proved fatal

to many elderly people, and soon terminated the sufferings of those who were in the advanced stage of pthisis pulmonalis, of which it became an exciting cause where a predisposition existed. It also frequently terminated in typhus. The treatment generally pursued was depletion, antimonials, and mucilaginous drinks. Measles, hoopingcough, and chickenpox, were prevalent during the winter.

1808. This season much resembled the last. Fevers of a continued type prevailed during the summer, but generally terminated favourably. In the month of January a typhoid fever appeared, which continued till May. It was confined to particular sections of the country, and as frequently originated in situations proverbially healthy, as in those of a different character. In many instances it terminated fatally. Different plans of treatment were pursued, of which none proved uniformly successful. Those who had hitherto considered mercury as infallible in all fevers, were now compelled to acknowledge their error. Some administered bark early in the disease; others, wine, brandy, and opium. The most successful treatment was early, though careful depletion, followed by stimuli, judiciously administered. The sudden prostration of strength, the small frequent pulse, brown tongue, and cold extremities, all indicated a disease of a different character from the inflammatory fevers which formerly prevailed.

1809. The summer was unusually cool, and the fevers of this season were of a less inflammatory character than common, readily assuming the form of a mild typhus. Intermittents seldom appeared.

1810. The spring commenced early, and the weather was less variable than the last season. The summer was hot and dry, and, during the winter, there was much snow and cold weather. The diseases of this year were similar to those of the last, though less numerous.

1811. Bilious fevers, with visceral obstructions, prevailed during this summer, which was extremely warm and dry. There were also many cases of diarrhœa. The winter months were excessively cold, with alternations of pleasant days.

Pneumonia, measles, and rheumatism, were the prevailing affections.

1812. In March, of this year, there were frequent cases of pleuritis, with great diversity of symptoms. In some cases, copious bleeding was required, with a strict antiphogistic regimen, while in others, an opposite course of treatment was indicated. The weather had been variable with southerly winds. In April and May were noticed for the first time, a few sporadic cases of *pneumonia typhoides*, a disease until then unknown, and which, during the ensuing winter, became the most formidable epidemic which had ever appeared in this country. In the first cases, the local affection was principally confined to the throat, and these were more fatal than those which succeeded them, in which the lungs and brain were principally affected. The summer months were extremely warm and dry. Diarrhœa, dysentery, and the usual fevers, were prevalent, without any thing remarkable in their symptoms. During the autumn, *pneumonia typhoides* again prevailed in different parts of the country, particularly among the soldiers at Lewiston, on the Niagara frontier.

1813. In January and February the weather was very variable, being alternately cold and humid; the epidemic pneumonia typhoides now became general, and caused great mortality. There were two forms of the disease: *sthenic* and *asthenic;* the greater portion, however, were of the latter kind. It differed from preceding epidemics, by its local determination to different parts of the system, particularly the brain and lungs. Its varied symptoms in different subjects, gave it a plurality of names, and occasioned a diversity of treatment. Some were attacked with violence, and died in a few hours, while others were but slightly indisposed. The disease was ushered in with severe cold chills, continuing several hours; pain in the head, back, loins, and side; cough, with expectoration of a frothy mucus, tinged with blood. The respiration was difficult, the extremities cold, and the pulse exhibited every variety; sometimes natural; again very slow, or quick; but, in most instances, the artery was weak, and easily com-

pressible. The morbid action was frequently translated from one part of the system to the other; thus, in one case, the patient was seized with a violent pain in the head, which continued several hours; on the subsidence of this, his legs became painful, and extensive inflammation and suppuration supervened. In other instances, the diseased action suddenly left the lungs, and inflammation and suppuration of the upper extremities followed. Such a multiplicity of symptoms occasioned a great contrariety of treatment: some depleted, others stimulated. On its first appearance, large bleedings were employed, but with temporary relief; in most cases the patient sinking on the third or fourth day. In other sections of the country, this mode of treatment was more successful. Those who were opposed to the lancet, trusted exclusively to opium, a practice equally fatal. The most successful treatment was restoring warmth, during the cold stage, by different stimuli, followed by moderate bleeding and evacuants; the skin being kept free, and blisters and tonics early employed. The epidemic ceased on the return of warm weather. In the spring there were a few cases of pleurisy. The summer was unusually healthy.

In the winter of 1814, the destructive disease of the preceding year returned, though it was not so malignant as it had proved during the last season. Depleting remedies generally produced a favourable termination. In the spring it wholly disappeared. There were fewer fevers this summer than usual. In the autumn, catarrhal complaints were very prevalent.

1815. The fevers of this year were generally inflammatory, and easily subdued. In July, dysentery prevailed as an epidemic, but admitted of free depletion. In some cases it was accompanied by external inflammation and tumefaction of the face, neck, and joints; in others the throat and fauces were affected; in some few instances, the inflammation of the face terminated in gangrene. The fatality was greatest among children.

1816. Every part of the country was this year unusually

free from fevers. Intermittents rarely occurred, except in new settlements, and continued fevers were very mild.

1817. There was nothing remarkable in the diseases of this year, except in September and October, when a fever with typhoid symptoms prevailed to a limited extent.

1818. In December, a fever similar to the last, appeared. In most cases typhoid symptoms supervened early in the disease, requiring the free use of tonics, which treatment was generally successful.

1819–20. Both of these years were generally free from fevers; but rheumatism, pleurisy, measles, hooping-cough, and dysentery, were constant visiters.

1821. Intermittents and remittents were more frequent this year, and were particularly malignant in different parts of the country. At Syracuse, a small village near Salina, many died suddenly. Hoopingcough, cynanche trachealis, cholera infantum, and measles, also prevailed. Among the cases of measles at Lyons, Ontario County, the following remarkable one occurred: Mrs. D—, aged forty years, in her eighth month of pregnancy, was taken with symptoms of measles on Tuesday; on the Friday following the eruption appeared on her face and neck; on Saturday evening she was seized with labour pains, and about two o'clock the next morning, the child was born, thickly covered with eruptions. The woman flooded excessively; and, for the five ensuing days, had turns of fainting, during which period the eruption entirely disappeared. On her gaining a little strength, it re-appeared on the face, with much difficulty of breathing; after that, successively on the abdomen and extremities, though the eruption never desquamated. On the eight day she expectorated large quantities of purulent matter, and died on the twelfth. The child lived.

1822. In the winter and spring of this year, the usual inflammatory diseases prevailed. During the summer, dysentery was epidemic, and many deaths occurred. Bowel complaints proved fatal to a number of children. Intermittents were more prevalent in old settlements than they had been for ten years previous; also remittents with unusual determi-

nation to the head. In some instances they were complicated with dysentery, the patient discharging large quantities of blood before death. At Salina, and in its vicinity, there were a few cases of a highly malignant character.

Calculous diseases are almost unknown, which is in opposition to the prevailing opinion, that they are peculiar to limestone countries. Goitre, or chronic inflammation of the thyroid gland, is a very common appearance. I have hitherto purposely avoided mentioning phthisis pulmonalis, among the diseases of the country, with a view of giving it a particular notice.

Since the time of Hippocrates, in has been a received opinion, that intermittents have great agency in the removal of other diseases. Boerhaave, in speaking of them, observes, "that unless they are malignant, they dispose a body to longevity, and purge it from inveterate disorders." By the moderns, this idea has been carried still further, and consumptions have been said to be almost unknown in those countries where intermittents prevail: the fens of Lincolnshire, and the inland parts of Holland, have been cited as examples. To a certain extent, this is the case in the Genesee country. Pulmonary affections, as idiopathic diseases, being rarely met with, although they are frequently the sequelæ of protracted intermittents. This has been accounted for on the supposition that the impure air of marshes is particularly favourable to the lungs of those who are predisposed to these complaints.

In the management of consumption, the main object is to translate the disease from the lungs, and to sustain it permanently in some other part without injury to the constitution, until the primary affection is removed. We see this effected in various ways. The action of mercury, by producing salivation, frequently arrests the disease in its earliest stages; the same effect is produced by the irritation of pregnancy, and as soon as the woman ceases to bear children, it invariably returns. In what way are these changes affected in marshy countries? Probably, by the increased action of the liver, and particularly of the stomach and intestines. In this coun-

try, and I believe it to be the case in all marshy countries, there is a general bilious diathesis, and a continual current to the bowels. Intestinal diseases prevail more or less throughout the whole year, accompanied frequently with hemorrhagic discharges. As cases are, however, at all times more particularly illustrative, I will select two out of a number within my recollection.

J. V. aged 26, a practising physician of Dutchess county, (N. Y.) of a slender habit, was attacked in 1811 with copious hemorrhage from the lungs, accompanied with stricture and pain in the breast, to which shortly succeeded a cough, with expectoration of bloody mucus. The hemorrhage continuing to occur at short intervals during the ensuing year, and his general health failing, in the fall of 1813 he embarked for Charleston, (S. C.) where he remained six months. The sea voyage benefited him; but he found the climate of the south rather prejudicial to his health than otherwise. On his return to Dutchess county, his complaint continued increasing on him for the ensuing eighteen months, when he removed to Geneva, (N. Y.) in the month of February, and immediately entered into the practice of physic. During March and April the hemorrhage continued, with a severe cough, and pain in the breast. After this month, however, and during the summer, all these unpleasant symptoms were completely removed, his habit became bilious, with derangement of the stomach and intestines. In the fall he had a violent attack of dysentery, which lasted thirty days; for the ensuing eighteen months, his stomach continued much disordered, having frequent occasion to take emetics, when large quantities of bile were discharged. Since which, with the exception of occasional intestinal irritation, he has enjoyed good health—a complete change being effected in his constitution.

E. B. aged 25, a lawyer of Dutchess county, (N. Y.) of a scrofulous habit, all his family having died with pulmonary affections, was attacked in 1810 with pain in the breast, cough, and slight hemorrhage from the lungs; which was followed by an increase of symptoms; the cough becoming more

violent, accompanied with purulent expectoration tinged with blood, and hectic fever. In the spring of 1811 he removed to Geneva, (N. Y.) and was immediately attacked with intermittent, with great derangement of the stomach and bowels; his cough and expectoration now gradually lessened, he soon became of a bilious temperament, and had repeated attacks of intermittent and dysentery for the first three years. His constitution then became familiarized to the climate, and he now enjoys perfect health.

Intermittents. The intermittents of this country naturally arrange themselves under two heads. Intermittents with ague; and intermittents without ague, or, as they are termed, *dumb agues.* Some authors notice many varieties of this disease, classing them according to the organ or organs most particularly affected, or the diseases with which they may be complicated. Among these refiners, Monsieur Alibert is most conspicuous.—He, like Hudibras,

> "Could distinguish and divide
> A hair 'twixt west and southwest side."

Such distinctions serve but to confuse; as in attending to local peculiarities, we almost invariably overlook the general cause of derangement.

Tertians are more common in this country than quotidians, although the latter are also frequent. Double tertians are not uncommon—quartans are met with occasionally. As to septans and octans, I have seen the fever return at these intervals, but believe that they are in general mere irregularities in the recurrence of the paroxysms. Senac observes, "It may indeed accidentally happen that some paroxysms fall on the 6th or 7th day, but it can scarcely be admitted, that they pursue this course, and observe their periods with regularity for any length of time." Again, "A patient may escape one or two paroxysms of tertian, in which case it will appear like a quintan or septan."*

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* Senac on Fevers.

Intermittents commence in March, and continue generally until the middle of July, when they are succeeded by remittents. Sometimes, however, intermittents predominate during the summer, the patients becoming pale, yellowish, and emaciated. In the months of September and October they again become prevalent; unless however complicated with visceral obstruction, they are suspended by the approach of cold weather, but usually return for a short time in the spring, especially if the course of the disease has been interrupted by remedies, in which case they will certainly recur, unless these are continued. The reason of there being more cases of fever and ague in the spring than at any other time, is, that the old cases of the last year, (which recur from habit,) intermix with those newly generated. Bancroft says, "that vernal intermittents may be considered as resulting from miasma received into the body during the prevailing summer or autumn, and, (after having remained in a quiescent state during winter,) rendered active by some exciting or proximate cause of fever in the spring."*

During the winter, intermittents are frequently complicated with other affections. These will be noticed after a consideration of those of simple form.

Occupation and diet considered as predisposing causes.—Since the time of Hippocrates, authors have noticed particularly the influence which peculiar occupations and modes of living have had in preparing the system to be morbidly acted upon. In this country, the inhabitants, with reference to their pursuits, may be arranged into three classes:

First. Out-door labourers, or such as are exposed to the heat of the sun, and to the changes of atmosphere.

Second. Such as are confined to the house, but whose business requires them to take a considerable degree of exercise within doors. Under this head may be included merchants, manufacturers, clergymen, lawyers, and a great majority of females.

Third. All persons accustomed to a sedentary life, as ladies

* Bancroft on Fevers.

and gentlemen of fashion, and others, whose avocations give little exercise to the muscles. With respect to the diet of these classes, as a general rule, more animal food is used in proportion, than vegetable. This is the case particularly with the lower classes, who subsist chiefly on salted pork and fish. As both of these articles are indigestible, and the former, from its gross quality, particularly calculated to generate bilious and dyspeptic affections, it may be considered as one of the most active predisposing agents.

As to the prevalence of intermittents among fishermen, I consider it less owing to their peculiar food, than to the nocturnal exposure consequent on their calling; one of the most common modes being to spear fish by torch light.

The first class which I have enumerated, from their constant exposure to alternations of heat and cold, together with fatigue, intemperance, poor diet, &c. bear the brunt of the disease of this country. Among these may be included indigent foreigners, who are powerfully acted upon; owing to their change of diet, and their being unaccustomed to breathe an atmosphere contaminated by miasma. To these are generally confined those highly malignant fevers, which are more or less met with at all seasons. The diet of the second and third classes consists of a larger proportion of fresh meat and vegetables, and they are susceptible of the same diseases as the first class, though in a less aggravated form.

The limits of the present essay will not allow me to enter more at large upon this subject. That it merits particular consideration must be obvious.

Marsh Miasma. Both Hippocrates and Galen had observed, and distinctly mention the insalubrity of stagnant waters, as swamps, marshes, &c. but they were ignorant of the means by which their morbid effects were produced. The attention of the medical world was first directed to marsh miasma, as the exciting cause of intermittent and remittent fevers, by Lancisi, physician to Pope Clement XI. who, about the middle of the last century, published at Rome his celebrated work, "De Noxiis Paludum effluviis." The researches of

modern writers have done little towards discovering its nature, which still remains involved in mystery. Many experiments have been made with a view to its analysis, and all the mephitic airs have at different times been considered as its base.* That these gases are exhaled from marshes, cannot be doubted; but they are likewise produced in situations where intermittent fevers are unknown. Under these circumstances, ignorant of its specific action, it is only left us to observe the phenomena of its generation, and to notice its varied effects on the human system.

It is observed to be most active during the first settlement of marshy countries, and to decrease in a ratio proportionate to their cultivation. There may be said to be three stages in the settlement of a country. The first, when it is in a state of nature; second, when partly cultivated; third, when entirely so. In the first, or forested stage, it is ordinarily healthy; the atmosphere is humid, and the temperature low, owing to the great evaporation which takes place, as it appears from experiment, that land covered with trees, emits one third more vapour than a surface of the same extent covered with water.† M. Alibert observes, that marshes are less injurious in proportion as they are more completely shaded by trees from the action of the sun, the inhabitants sustaining no other inconvenience than that which results from the vicinity of a moist atmosphere, which alone will not produce intermittents.‡ This is satisfactorily proved by experience, as the settlers of a country are free from them until they have partially cleared the land.

During the second stage, as cultivation advances, the moist ground, particularly the marshes, are laid open to the influence of the sun, and vegetable decomposition is the result, the remaining forest preventing a free circulation of air, and thus concentrating the miasma. The smaller streams are also rendered sluggish, and frequently overflow their banks, owing to

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* Experiments of Adam Seybert, M. D.

† Williamson on Climate.

‡ Alibert on Intermittents.

the quantity of timber with which they are obstructed, and thus they become an additional source of disease. Intermittent and remittent fevers, cholera, and dysentery, now prevail, and this may be considered the most unhealthy period. Dr. Rush says, it is a well known fact that intermitting and bilious fevers have increased in Pennsylvania in proportion as the country has been cleared of its wood. In the third stage, an artificial soil is produced, the lands have parted with their humidity, and vegetable decomposition has relatively ceased, for want of materials. The type of diseases now corresponds. Inflammatory and malignant fevers prevail, and the intermittents, from being simple, become complicated with other diseases. While marshes are covered with water of a sufficient depth to prevent putrefaction, they are healthy; hence wet summers in marshy countries are considered less sickly than those which are dry, a fact which was noticed by Hippocrates. Sir John Pringle also tells us that the inhabitants of Breda defend themselves from the morbid exhalations of a piece of marshy ground in its neighbourhood, in the season of bilious fevers, by overflowing it with water. For the same reason, swamps are more unhealthy than marshes, as the water subsides more readily, and they contain a larger proportion of vegetable matter. This, however, will depend on the previous condition of the soil. Bancroft observes, "that miasma will be most abundant in that soil which contains no more moisture than is really necessary for the complete decomposition of the vegetable and animal substances existing within."*

The mixture of salt with fresh water was early noticed by the ancients, (see Pliny) as producing more noxious exhalations than either uncombined. Sir John Pringle made experiments with a view of determining the cause, the result of which proved that salt in small quantities is a hastener of putrefaction.† Others, among whom is Dr Jackson, assert to the contrary, notwithstanding that the admixture of salt wa-

* Bancroft on Fevers.

† See Experiments by Sir J. Pringle on Septic and Antiseptic substances.

ter with that of marshes, does not increase the production or malignancy of intermittent fevers. The result of my observations made at the villages of Salina and Montezuma, where this combination takes place, is, that it depends entirely on the proportions in which the waters are mixed. If the waters of fresh marshes are largely combined with salt water, or vice versa, the general healthiness of the situation will be improved. Dr. Hosack mentions, in his lectures, that the marshes at Hoboken, in New-Jersey, while overflowed by the sea water, were healthy, intermittent and remittent fevers being unknown; but since they have been drained, and the ingress of the salt water has been prevented, these diseases are endemic. This was further proved by the breaking of the dykes during their prevalence, when they immediately ceased.

Both at Salina and Montezuma, the proportion of salt water furnished by the springs is small, when compared with the great quantity with which the fresh waters of Onondaga and Cayuga lakes dilute it. Both of these places, although proverbially unhealthy, are not more so than similar situations where fresh water is uncombined. Exceptions are, however, to be made to those places where the waters mingle in a concentrated form. Thus, at Montezuma, the inhabitants of those houses in the immediate vicinity of the salt springs, are never free from intermittent and remittent fevers. Every family that moves into them is attacked, while those who live at a short distance, although adjacent to the marsh, are comparatively exempt.

It is a singular fact, that the boilers of salt are generally free from these fevers, owing probably to the increased temperature they are constantly exposed to keeping their skin pervious, and thus eliminating the poison, or to the decomposing gas with which they are surrounded. Pliny observes, that "they who are seasoned, may live amidst pestilence." By the word seasoning, is generally understood having undergone repeated attacks of the endemic, by which the predisposition is removed. I should rather think it was owing to the lungs becoming accustomed to the inhalation of the miasma,

which at length becomes innoxious, and not to any radical change in the constitution. That habit counteracts the remote cause of disease, cannot be questioned. Children brought up in marshy countries, are generally exempt from their diseases; and we may accustom ourselves to the use of poisons, by commencing with small doses. Lancisi observes, that "persons who expose themselves for the first time in unwholesome situations, are the more affected in proportion as they have been accustomed to pure air."*

The presence of marshes is not, however, necessary to the production of intermittents. Ponds both of pure and stagnant water; woods, lakes, and creeks, have the same influence, though in a less degree. Artificial ponds frequently generate miasma. I have seen this exemplified in the damming of a small creek, by which it was caused to overflow two or three acres of meadow land. The pond thus made, was to appearance perfectly pure, containing no fallen timber, or decaying vegetable materials. The land was high, and intermittents and remittents were previously unknown: they, however, immediately became so prevalent, as to render it necessary to remove the dam. In another instance of a similar nature, the sickness continued two or three seasons, and then subsided, leaving those in the vicinity exempt for years; when it becoming necessary to make the dam higher, more ground was encroached on, and precisely the same state of things occurred as when the dam was first made. I have known frequent instances, where brooks becoming partially dry, have produced intermittent fever. It is generated also by lakes. Here the vegetable matter probably exists in the waters, and undergoes decomposition when washed on the shore. It is also sometimes produced by direct combination. I have known decaying potatoes in a wet cellar to produce intermittent fevers.

The same effect is noticed by Dr. Rush, as produced by many other vegetables. Miasma is detained very near the surface of the earth, and seldom rises to any height; resem-

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* De Nox Palud. Effluv.

bling, in this particular, some of the mephitic airs. The carbonic acid of the Grotto del Cane will immediately deprive a dog of life; but a human being may enter it with impunity. The same in brew-houses: a person is safe until his respiratory organs are so placed as to receive a substance, which, either from its weight, or from the air with which it is mixed, occupies a lower position. Bancroft observes, "that the power of marsh miasma in exciting diseases, is rapidly diminished at a very small distance from the earth."* It has also been noticed, that the labourers in marshes, while in the erect posture, escape the fevers, but are attacked if they sit, and more particularly if they lie down on the ground, and that too whether they sleep or not; here the miasma has probably been entangled by plants, which frequently detain it.†

Sir J. Pringle observes, that among the soldiers quartered in marshy situations, those who occupied the lower stories of the barracks were subject to intermittent and remittent fevers; while those in the upper were comparatively exempt. An exact calculation of the height to which miasma ascends, of course, has not been made; but still an opinion may be formed form the following facts. About three miles north of the village of Canandaigua, are numerous ponds, about a mile in length. These are generally dry in summer, though never entirely so. About twelve rods from one of these, a house is situated on an eminence of thirty feet. During the summer of 1821, which was peculiarly favourable to the generation of miasma, the spring being moist and the summer warm, a whole family was seized with intermittent and remittent fevers, who had been exempt for fourteen years previous, during which time they had lived in the same place. The street on which Canandaigua is built, is about two miles long, from the lake, northward. From the lake, five or six furlongs are nearly level, and probably not more than twenty or thirty feet above its surface; the ground then ascends, and the

* Bancroft on Fevers.

† Edinburgh Review.

remainder of the street is high. This ascent divides the aguish and healthy districts; the former always furnishes numerous cases of intermittents and remittents; in the latter, they rarely or never attack those who have not been exposed to other sources of infection. The same thing occurs in the village of Geneva, which is similarly situated.

Organic derangements of the liver and spleen have long been known among the sequelæ of intermittent fevers. I believe, however, that they occasionally occur without the presence of fever, being directly produced by the operation of miasmata. A late celebrated writer, Signor Brocchi, on the malaria of Italy, observes, that the unfortunate inhabitants of pestiferous marshes, in vain flattering themselves that they have escaped the fever, fall victims to dropsy and other disorders arising from organic derangement. In corroboration of this, is the singular fact, that those animals which feed in marshes, where these fevers prevail, are found to have diseased viscera. In the town of Wolcott, Seneca county, where marshes and lowlands abound, the hogs, when killed, are generally found to have eroded livers. Cleghorn also observes, "that large spleens and tumefied livers are not only common to the human species, but also to the brutes, particularly the sheep."*

Intermittent and remittent fevers are not the only diseases produced by marsh miasmata; but dysentery, cholera, and a great diversity of ailments spring from the same source, and, with the exception of particular local affections, are in the incipient stages susceptible of the same treatment. Dysentery, as arising from miasma, has been particularly noticed by many eminent writers. Pringle observes, "that cholera and dysentery, in moist countries, appear at the same seasons, and seem to be particular determinations of the vitiated humours, which, if the first passages give vent, a cholera ensues, but if they are retained and carried into the blood, they produce intermittent and remittent fevers."† Dr. James

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* Cleghorn on Diseases of Minorca.

† Pringle's Diseases of the Army.

Clarke says, "that a dysentery generally prevails, at the same time that the intermittents do, in the West Indies, and probably from the same cause."* Cleghorn and Moseley express similar opinions. The following fact appears corroborative of the same doctrine. A mill-pond, in the vicinity of Lyons, Ontario county, which overflowed ten or fifteen acres of land, was drained in the summer of 1822 for the first time, the mill having been built about five years. In consequence, about thirty people in the immediate vicinity were taken suddenly ill, seven or eight of whom died. In the same family, persons were seized with intermittents, remittents, cholera, and dysentery. Some of the remittents were very malignant. In one case, the paroxysm left the patient with perspiration on his extremities, while his body remained hot and perfectly dry. M. Alibert also notices a similar fact, where "some soldiers, clearing the land in a very humid and marshy situation, were taken ill suddenly. Three died of cholera, five of dysentery, and four of malignant fever."† The phenomena which this mysterious agent produces are so various, that it would be useless to enumerate those which have not particularly fallen under my own observation. I shall, therefore, reluctantly quit this interesting subject.

Mode of Invasion. The usual symptoms of attack are too well known to need description. I shall therefore confine myself to a brief notice of such peculiarities as I have observed.

Occasionally the patient, on the accession of the paroxysm, becomes comatose, which M. Alibert has defined the "soporose state." This is, however, rarely met with, except in those who are very plethoric, or who are predisposed to determinations to the brain.

I have known a tertian, for the first seven or eight paroxysms, to be regularly ushered in by colic; again by cholera, which would last three or four hours; also a quotidian, where subsultus tendinum was an invariable attendant through-

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* Clarke's Treatise on the Fever at Demarara.

† Alibert on Intermittents.

out the disease. That chills are by no means constantly present, will be shown when treating of intermittent without chill. Such, however, is the variety attendant on the mode of invasion, that it would be useless further to particularize.

Termination. The most common termination of intermittents is in health. During the summer months they become remittent, and again intermittent as the winter approaches. Swelling of the epigastrium, abdomen, feet, &c. frequently follow the paroxysms. In long protracted cases, or when improperly treated, chronic affections of the liver, spleen, and intestines, are the result. In children, when they do not terminate favourably, hydrocephalus is a frequent consequence.

That species of phthisis pulmonalis, which arises from an affection of the liver, may be considered as one of the sequelæ of obstinate intermittents, in those cases where a predisposition exists. Here they are apt to be confounded with a quotidian remittent. The paroxysms of hectic fever are however longer, the several stages less defined, and the sweats less profuse.

Treatment. The particulars of the treatment to be pursued in the several stages, are so generally understood, that a detail would be unnecessary. A general view of the practice found to be most successful in this country, will be all that my limits will permit. The first object is to render the disease as regular as possible. In the hot stage, if there is much pain in the head, with a hard pulse, or comatose symptoms present, bleeding is indispensable. About two hours previous to the accession of the next paroxysm, an emetic of tart. antim. and ipecacuanha should be given, followed by antimonials or Dover's powder every hour, in as large doses as can be borne. If the emetic does not move the bowels, a mild cathartic should be given; and if, by these means, the head is not relieved, a blister should be applied to the nape of the neck. When, by these remedies, the pain in the head is nearly subdued, the tongue becoming somewhat natural, and the paroxysm going off with sweat, a drachm of powdered bark may be given every fourth hour, while there is no fever, con-

tinuing the antimonials every hour during the paroxysm. If the disease prove obstinate, the emetic should be repeated, and the regions of the liver and spleen examined; and if any enlargement or tenderness should be manifest, blisters should be applied; but if no irregularity appears, the dose of the bark may be increased. When the disease is at first regular, an emetic and a dose of bark frequently succeed in checking it at once. The paroxysms being stopped, the bark is to be discontinued very gradually, and a few doses should be taken every week throughout the season, which, with generous diet and an avoidance of exposure, is all the prophylactic treatment necessary.

If the disease has been properly treated, relapses are rare; but sometimes slight attacks occur, after a renewed exposure to the remote and exciting causes. When a relapse does take place, the disease frequently assumes the remittent form.

There are various opinions as to the expediency of stopping the paroxysms by the use of bark, it having been supposed that obstructions of the liver and spleen are the frequent consequence. This is a prejudice which the common people have strongly imbibed, and accordingly they always prefer that the disease should run its course. On this point Lind expresses himself strongly. "An ague cannot be stopped too soon: the more severe it is, the more urgent is the necessity of applying a remedy, as the constitution is always found to suffer least when the ague is early removed."* Experience has proved this to be the case.

The most common substitutes for the cinchona in use among the country people, are the barks of the *Liliodendron Tulipifera*, *Cornus Florida*, and the *Prinos Verticillatos*, or black alder. All these indigenous barks resemble the cinchona in their effects; and when we consider the common adulteration of the latter, may be deemed nearly as efficacious. Many other indigenous plants of tonic properties are also frequently

* See Lind on Hot Climates.

resorted to, as the *Aralia Nudicaulis*, or American sarsaparilla, and the *Frasera Caroliniensis*, or American columbo. These are sometimes successful where cinchona fails. "Intermittents will yield to the most feeble remedies of another class, when they will not to bark and other powerful stimuli."* Arsenic is but little used in this country, except in very obstinate cases: its great inferiority to bark consists in its not giving tone to the system. Hence those who are cured by arsenic recover less readily than those who are cured by bark. Spiritous liquors are much resorted to by the common people for the prevention of the cold stage, and frequently with fatal effects. I have known a person drink a pint of brandy for this purpose. The chill did not occur, but a high fever ensued: he became comatose, and expired. Lind recommends opium to be given during the hot stage. It probably is useful in warm climates, where there is a greater tendency to the skin than here. There can be no question of its efficacy in checking the paroxysms, after an emetic has been premised.

The treatment of vernal intermittents varies from that of autumnal They are always of a more inflammatory nature, partaking of the character of the winter diseases. Their intermissions are generally distinct, and they are seldom obstinate. In their treatment the lancet is indispensable, but bark should be administered with caution, inflammation of the intestines being sometimes the result, where free depletion has not been premised. During the winter and spring, pleurisies, rheumatisms, and many other affections, assume the garb of intermittents. Here the miasma has probably lain dormant in the system since the preceding summer, and has been called into action by these inflammatory diseases, which become exciting causes. Pringle observes, that "predisposition to a disease may remain long after a disease is cured. Influenza in February became an exciting cause of ague in persons who had them the preceding summer."† M. Alibert has termed these

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* Hillary. † Sir J. Pringle on Diseases of the Army.

the pleuritic and rheumatic states of intermittents.* In these complications bleeding and emetics are indispensable; they are in general speedily subdued by active treatment.

Dumb Ague. This form of intermittent is generally of the quotidian type. It commences in March, and continues until the middle of June; it appears again in September, and is not arrested until cold weather. The paroxysms, with the exception of the first, are not ushered in with chill, which, as well as the sweating stage, is wholly wanting throughout the disease. Some four or five days previous to the attack, the patient complains of languor, great debility, and loss of appetite, slight headach, with severe wandering pains about the joints, which may be considered as one of the characteristic symptoms of this form of intermittent. The vessels of the conjunctiva are distended with blood, the tongue is covered with white fur, the pulse but little accelerated. About the fourth day, the patient is attacked with a severe chill, which is succeeded by fever, but no sweating stage. The symptoms are now aggravated, there is an entire loss of appetite, with dizziness and pain in the head, the adnata of the eye are yellowish, and there is a want of power over its muscles. The nausea is incessant, with sometimes a slight vomiting, when nothing but *mucus* is brought up, accompanied with great exhaustion and tendency to deliquium; the tongue is yellow, with a very long fur; the pulse is small, quick, and tense; the bowels are costive, or else there is diarrhœa.

Treatment. The best is venesection from ℥xx. to xxv. followed by an emetic. This generally brings up large quantities of mucus, but no bile. Then a cathartic of calomel and jalap, gr. xx*aa*. The evacuation produced will consist of dark bilious matter mixed with a great quantity of slime. On the fifth or sixth day the patient will require bleeding again, with a repetition of the cathartic. About the seventh, there is commonly an increase of headach, when another emetic should be given, by which large discharges of

* Alibert on Intermittents.

bile are produced. This, followed by active cathartics, will generally cure the patient by the ninth or tenth day. There is another variety of this form, the symptoms of which are like the one just described, with the exception of the pulse, which here is slow and feeble, with cold extremities. A different course of treatment is now to be followed. As soon as the warmth is somewhat restored, by the means usually employed, an emetic is to be given, by which nothing but mucus is evacuated. This is to be followed by a cathartic. After these have operated, the pulse will generally rise full and hard with much fever. A large bleeding is now admissible, say ℥xx. to xxv. The following day another will probably be required; after this, a moderate cathartic will commonly cure the patient in six or seven days.

These forms are sometimes very obstinate, and appear to be an intermediate grade between fever and ague and ordinary remittent. They are more common now than they were on the first settlement of the country, and are more apt to terminate in typhus than the usual forms.

The large quantity of mucus contained in the stomach and intestines, appears by its viscidity to obstruct the biliary ducts; hence the first evacuations are wholly mucus, while the latter consist of bile in great quantities. The mucus is doubtless generated by irritation, just as we find it in the bladder.

It may be remarked, that more active treatment is necessary in this country than is usually practised in our cities; hence the larger bleedings and the increased doses of medicines.

Congenital Intermittent. Lind is the only author I can find, who notices intermittents as appearing among infants at the breast. The following singular cases, which occurred in the village of Canandaigua, were communicated to me by Dr. Hayes of that place:

Mrs. W—, wife of Dr. W—, was brought to bed of a child during a course of the fever and ague. Within *three weeks* after birth, the child was attacked with the same disease, and underwent a long course of it.

Mrs. G— was attacked with fever and ague, about the 1st of August. The disease continued, with some interruptions, during the autumn, winter, and spring. In May, about a week after the paroxysms had ceased, she gave birth to a daughter, who, within eight or ten days, was attacked with the same disease, and which continued, with some interruptions, for nearly two years, during which time little hope was entertained that the child would survive. It finally recovered, but was always weakly. *The mother never afterwards had the disease.*

Mrs. R— had fever and ague at two different times; the latter six or seven years before the birth of her last child. During the last stage of her last pregnancy, intermittents were very prevalent. Having for several days suffered some of the precursory symptoms, she was, on Sunday afternoon, attacked with a severe paroxysm. Every stage of it was regular and distinct, the paroxysm terminating in diaphoresis. On Monday morning she was delivered of a boy, apparently at the full time. On *Monday afternoon*, at about the *same time of day* at which the Sunday's paroxysm had occurred, the *child was attacked.* The cold stage was severe and long; the skin being livid, and the child was thought to be dying. This was followed by the hot stage, and, in due time, by diaphoresis. The paroxysms continued to recur daily, for about a fortnight, when small doses of Peruvian bark were given. The disease soon ceased; but in about a week, the child had two fits more, when the bark again arrested it. The child is now more than two years old; is fat and healthy, and has had no more attacks of the fever. The disease *did not recur in the mother after delivery.* Both still reside in the same house, which is situated on aguish ground.

These cases seem to prove very satisfactorily that the disease is sometimes congenital. The second case appears to show that a regular course of disease in the mother, during pregnancy, does not remove the susceptibility of the fœtus in utero. The third is remarkable for the regular transfer of the disease from the mother (in whom the susceptibility had been

worn out) to the child, who, like others who never had the disease, was perfectly susceptible of it.

Remittents. The remittent fevers of this country usually commence about the middle of July, and continue until the end of October, when they either cease, or terminate in intermittents or dysentery. Occasionally a case will continue remittent after cold weather has appeared, but it soon becomes continued or typhus.

The paroxysm of a remittent differs from that of an intermittent, by the cold stage being shorter, the hot stage longer, and the sweating stage but partial. In a remittent also there is no apyrexia. But there are other appearances equally diagnostic. In the remittent there is a slight pain in the forehead and eyes, during the remission; the pulse also retains its sharpness, and the skin, though moist, is hotter than natural. Notwithstanding these palpable distinctions, they appear to be but different forms of the same disease, arising from the same causes, and continually terminating in each other; remittents, when they first appear, being easily convertible into intermittents, but, as the season advances, they become more formidable, offer greater resistance to remedies, and are frequently complicated with dysentery.

In particular situations, and in particular seasons, they become typhoid. These will be noticed under a distinct head.

The autumnal remittents generally have a local tendency, either to the bowels, brain, or lungs, which alternate in different years, and in different sections of the country. Thus in Geneva, during the last year, the bowels were particularly affected, while at Lyons the force of the disease was directed to the lungs. These varieties are, however, too numerous to be particularized.

The usual symptoms preceding, and attendant on the paroxysms of a simple remittent, are the same here as elsewhere. The occasional peculiarities in the mode of attack, have been noticed under the head of intermittents, they being equally applicable to both.

Treatment. Bleeding is rarely required. An emetic is to be given, and this should be followed by a blister to the nape of the neck, and antimonials as often as the patient will bear them, or Dover's powder. By this treatment, a copious perspiration is usually induced, and frequently a considerable intermission obtained. The treatment should not be relaxed, but pursued closely, giving, during the intermission, a decoction of R. serp. virg. As soon as the intermissions become regular, cinchona may be given, with a view of arresting the paroxysms. During the course of the fever, particular symptoms require particular treatment. Headach may need additional blisters behind the ears. Accumulations in the stomach may call for a repetition of the emetic. Laxatives may be needed to remove the contents of the bowels; anodynes to procure sleep, or to allay irritation; diuretics to promote urinary secretion, and bleeding to diminish inordinate action of the heart and arteries. The dyspnœa is best relieved by blisters in the course of the medulla spinalis. A furred and dry tongue, by one or two doses of calomel; dysenteric, pneumonic, and comatose symptoms, require to be treated on general principles.

A demulcent in general use in this country, is the root of the *viola cucullata*, or blue violet. It affords as great a quantity of mucilage as the *mimosa Nilotica*, and is found in large quantities.

The remittents of last summer (prevalent in Geneva and its vicinity) frequently terminated in large discharges of blood from the bowels, without being preceded by any pain. Many of these terminated fatally, among which were the following cases:

Miss B—, aged eighteen years, an inhabitant of Geneva, Ontario County, having been slightly indisposed with a pain in her side for some months previous, was attacked on the 1st of September, with the usual symptoms of remittent; as chills, head-ach, hot skin, frequent pulse, and nausea. The fever continued without any susceptible remission, until the sixth day. During this period she was bled, took an

emetic, which evacuated large quantities of bile, and underwent the usual course of treatment. On the seventh, she had a remission of twenty-four hours: from the eighth until the twelfth the remissions were imperfect. Her case until now had not been considered dangerous, when a copious discharge of blood took place from her bowels; after this she had severe griping pains and tenesmus, with frequent evacuations of mucus, bile, and blood. Previous to the first discharge, she had complained of no pain in her bowels. She died on the fifth day after this took place.

In another case, the remittent fever, after a continuance of twenty-one days, became distinctly intermittent, and the patient appeared to be improving until the twenty-sixth, when a quantity of blood was voided from the bowels; after which great prostration ensued, with a slow and feeble pulse; the skin being universally covered with moisture, the discharge recurred in three or four days, and the patient sank under it.

In this case tonics had been administered early in the disease.

Alternations of remittent fever with dysentery. When treating of marsh miasma, it was observed, that dysentery might be enumerated among its occasional productions. There is, however, a distinction to be made between epidemic dysentery and the form I now allude to, which is much less rapid in its progress, and fatal in its consequences.

Remittent fevers, in certain seasons during the autumnal months, become complicated with dysentery; when these diseases frequently alternate, the dysenteric symptoms continuing about five or six days, when they are succeeded by fever, the patient not having both at the same time, and thus verifying the aphorism of Sydenham, "Febrem eum esse sui scilicet generis, in intestina introversam." Cleghorn observes, "Sometimes a tertian is changed into a dysentery, or a dysentery becomes a tertian; and when one of these diseases is suppressed, the other often ensues." Pringle says, "That those who had dysentery seldom had fever, or if any man had both, it was alternately, so that when the flux began, the fever

ceased, and when the former was stopped, the other returned;" here proving the unity of autumnal diseases.

The most *remarkable variety of remittent fever* prevalent in this country, is that in which the stomach is particularly affected. These fevers commence about August, and continue through the fall and summer. The patient is attacked with chill, severe pain in the head and eyes; the vessels of the latter being much distended with blood; the skin is hot, and communicates a pungent sensation, but has not the usual bilious colour; there is great thirst, the mouth being lined with a thick mucus; the tongue is covered with a white fur, and the pulse is strong and full. There is a constant *nausea of the stomach*, with great irritability, which is a characteristic symptom of this form of fever, and which continues throughout its course. The bowels are sometimes constipated; again there is diarrhœa, but always a great tenderness on pressure. The febrile stage is not succeeded by any sensible moisture on the skin. These symptoms appear suddenly, without the previous indisposition attendant on the usual form of remittents.

The treatment found most effectual is, in the first place, a copious bleeding, say twenty to twenty-five ounces, followed by a mild cathartic every day. The discharges thus produced consist of a dark bilious matter, very offensive, and mixed with a quantity of slime and mucus. About the fourth day, an emetic is requisite, which brings away large quantities of mucus, mixed with bile. The symptoms now are generally removed, except the tenderness of the stomach and bowels, which is at length effectually overcome by active emetics and cathartics, within the three or four succeeding days. This form, if timidly treated, will occasionally continue thirty or forty days, frequently terminating in organic affections. Sometimes, a spontaneous diarrhœa will relieve the patient. It is also more apt to run into typhus than the common forms of remittent.

Occasionally the cases are more severe, the stomach being so irritable that nothing can be retained. There are perpetual efforts to vomit, which cannot be checked by the usual re-

medies; the patient becoming cold, livid, faint, and on the verge of immediate dissolution, which sometimes takes place from the great exhaustion. Sometimes, however, laudanum applied to the spine will succeed, where blisters and internal stimulants fail.

I cannot find any notice of this peculiarity by authors, except a communication in the Quarterly Journal of Foreign Medicine and Surgery, for April, 1822, by John Peter Frank, who terms it *gastric remittent*, and makes two species, the inflammatory and nervous. The latter he thinks more apt to run into continued. I am not aware of having seen any of these varieties.

Remittents terminating in Typhus. A few cases of this description occur every summer, in particular sections of the country, in some instances terminating fatally in six or seven days, with highly aggravated symptoms; while again, their duration is much longer. As a particular notice of the symptoms and treatment can be best exemplified by the detail of a case, I have selected one of the kind most frequently met with, and in which the duration gave an ample opportunity for the full development of the disease.

E. F., aged 25, an inhabitant of Syracuse, Onondaga county, while attending a saw-mill in that vicinity, the pond of which overflowed many acres of low-land, was, on the 6th of August, 1822, attacked with slight cold chills, pain in the head and limbs, and great debility. His skin was yellow, his tongue a little furred, his pulse slow, and his eyes a mixture of red and yellow, and very sensible to light. His bowels being costive, a cathartic of calomel and jalap was administered, which operated well. On the 7th, he was much better in the morning, having little fever. About 2 P. M. the paroxysm appeared, preceded by horripilatio and delirium, the pulse full and strong, about 65; increased as he became warm; and at 6 P. M. was 100. After bleeding ℥24, his pulse fell to 90, and became softer. His tongue was now covered with yellow sordes, and his eyes more yellow and painful. During the paroxysm, which lasted six hours, a diaphoretic of sal.

nitre, tart. emet. and laud. was given frequently, with cold applications to the head. As soon as the remission took place, an emetic was administered, which brought off large quantities of bilious matter, which was also discharged from the intestines. On the 8th, he was much better, his tongue was less furred and more moist, and all his symptoms were improved. In the afternoon, on the accession of the paroxysm, he was again delirious, his pulse full and soft, about 70: his skin, however, was hot, with a biting sensation; his bowels open. He was kept under the former diaphoretics.—9th, he was much improved, until afternoon, when he became quite comatose, his tongue having a brown streak in the middle, and his eyes and skin very yellow. During this paroxysm, antimonials were principally given.—10th. Paroxysm came on much earlier; perfectly comatose; could not be awaked, having to force open his mouth to give him medicine. This lasted ten or twelve hours; and as soon as a remission appeared, Fowler's solution was given 10 gt. every five hours, with bark and serpentaria.—11th, morning, much better: the afternoon accession was much later in its appearance, and there was less coma. He was sponged with cold water during this paroxysm; and on the remission, a repetition of Fowler's solution and tonics.—12th, better.—13th, better.—14th, relapse: coma again supervened, with coldness of the extremities; pulse small and feeble, tongue brown. Put him again on Fowler's solution, with tonics, and about the 20th, he was out of danger.

In this case, and in many others of a similar nature, I had an ample opportunity of observing the marked effect produced by Fowler's solution, which succeeded almost in every instance in curing the disease.

Fever at Salina. On referring to the locality of this village, as detailed in the topography of the Genesee country, it will be apparent that it must necessarily be subject, during particular seasons, to fevers of a highly aggravated nature. Indeed, every few years the attention of the public has been directed to this place as the hot-bed of pestilence. During the last summer, much alarm was excited from four or five deaths

occurring in succession; only two of them, however, were cases of fever, and these are now subjoined.

J. M'C., aged 23, a clerk in a store in the village of Salina, Onondaga county, of a slender habit, and predisposed to pulmonary affections, had been somewhat unwell during the spring of 1822. On Saturday, the 1st of August, he was attacked with slight chills, which alternated with fever for the first twenty-four hours. He had severe pain in the head, back, and extremities, and great restlessness: his pulse was full and slow. On Sunday morning he was bled about ʒ xiv. and took an emetic. The fever had now distinctly assumed the type of a remittent. In the afternoon, a cathartic of calomel and jalap was given, his bowels not having been moved by the emetic. On Monday morning he was quite comfortable, and had a little appetite. In the afternoon, on the accession of the paroxysm, he had a slight chill, which was succeeded by great heat of skin; his eyes were red, tinged with yellow, his pulse small and quick. Coma now ensued, and continued throughout the paroxysm, which lasted twelve hours, and went off with a slight moisture. In the course of the day, he was bled, and took a mild cathartic.

On Tuesday afternoon, the paroxysm supervened earlier, with the same symptoms, in a more aggravated degree. There was a pungent heat of skin and great thirst, his tongue was covered with a brown fur, and he remained perfectly insensible during the paroxysm, which lasted fifteen or sitxeen hours, and then gradually abated with but little moisture of skin; he now became sensible, and took some nourishment. On Wednesday, the paroxysm anticipated some hours, and was more severe than the last, and did not entirely leave him before the accession of the next. During this period, he was as before perfectly insensible, and vomited large quantities of dark coloured fluid. On Thursday, he was to appearance in "articulo mortis;" his pulse was hardly perceptible, his extremities cold, his breathing laborious, and the whole surface became very yellow, which is not uncommon. He remained in this

situation until Saturday, the eighth day from the attack, when he died.

J. B. aged thirty-three, a merchant in the village of Salina, of a feeble constitution, had been quite unwell during the spring of 1822, but refused to take medicine of any kind. He was attacked on the 8th of August following, in a manner similar to the subject of the last case, his skin assuming the same yellow colour. He had no fixed pain, but a great degree of uneasiness and distress, accompanied with frequent sighing; each paroxysm became more severe, he being comatose throughout. On the seventh day he died.

The vomiting of black matter is the only uncommon symptom in these two cases; and I have seen this discharge occur in two or three instances in which the patients recovered, and where it evidently arose from congestion of the liver. As the subject is one of interest, I will subjoin an account of them.

J. W. aged fifty, a workman on the canal, engaged in its excavation across the Cayuga marshes, was attacked in the month of June, 1821, with intermittent fever, which readily yielded to the usual remedies, and in a short time he resumed his occupations. About the middle of the ensuing August, he was seized with bilious vomitings, resembling cholera, his skin was very yellow, his tongue covered with a brownish fur, his pulse chorded, and he complained of much pain in the region of the liver; the vomiting continued three hours, and then changed in colour, becoming like coffee grounds. This black matter was also copiously discharged by stool, and produced extreme prostration. With the aid, however, of the most powerful remedies, it was checked, and the patient had a low remittent fever for fifteen days, which changed into an intermittent, and he slowly recovered.

In 1822, G. M. aged 32, a lock tender, where the canal intersects the Seneca river, (being the same place where the previous case originated) about the 20th July was attacked with intermittent fever, which continued four or five days, and then subsided, leaving him in his usual health. Fifteen days afterwards, he complained of pain in the right hypochon-

drium, with nausea. An emetic was given him, which produced no sensible evacuation, this was followed by a cathartic. He continued in this state, complaining of pain in the region of the liver and spleen, until the 20th, when he began to vomit black matter in large quantities, resembling coffee grounds, or coagulated blood, accompanied with pulsation in epigastrio. Similar matter was also discharged by stool, but after some time the stomach was quieted by blisters, and the draught of Riverius; leaving him, however, much prostrated with continued faintings and difficult respiration. These alarming symptoms were removed by powerful stimulants, when a fever of a remittent type supervened. After some days had elapsed, an emetic was given, which brought up large quantities of common bilious matter, the patient slowly recovered, but his health is delicate, complexion sallow, and he has a constant pain in his right side.

J. M. a farmer in the vicinity of Geneva, (N. Y.) aged 60, of a healthy constitution, was attacked in April, 1822, with a tertian; he called in no physician, but began the use of bark and tonics without depletion of any kind. By these means he broke the paroxysms entirely, and soon returned to his occupations. About four weeks afterwards, he was attacked with remittent fever, his skin and eyes were very yellow, his pulse feeble, his tongue covered with yellow sordes, with great pain in the right hypochondrium; in a day or two he was seized with a constant vomiting of large quantities of dark matter resembling tar, both in colour and consistence. The same was discharged from the intestines, his extremities were cold, and the general prostration excessive. The discharges were arrested with some difficulty by means of tonics, blisters, and mild cathartics, but returned for three days in succession. He, however, eventually recovered, but is still feeble, with pain in the region of the liver.

I have detailed the following case with a view of showing the great efficacy of calomel, when given in large doses, in arresting uncontrollable vomiting.

J. C. aged 30, of a corpulent habit, having been for some time in the vicinity of the canal, where it passed through marshy land, was attacked in the month of April, 1821, with the usual symptoms of a quotidian, which after a few days continuance became a remittent. He had much languor, with a sallow countenance. The usual evacuations having been premised, tonics were now resorted to, and with good effect, the paroxysms becoming lighter; but this was of short duration, he being suddenly attacked at the commencement of the cold stage, with excessive vomiting of bilious matter, accompanied with hiccough and pain in the right side. A blister was now applied, which arrested the vomiting. During the next paroxysm, however, it returned with increased violence. The fluid discharged was slightly bitter, of a greenish cast, and in enormous quantities; the hiccough now became very distressing, and an inverted action of the intestines appeared to have taken place; part of an enema, containing ol. anis. being thrown up, which had been given him half an hour previous, the symptoms now partially abated, the matter vomited having the same colour and consistence as in the preceding case.

In this extremity, the usual remedies having failed, calomel was given in doses of sixty or seventy grains every two hours, which, after being repeated three or four times, effected a copious evacuation from the intestines of the same black matter which had been ejected from the stomach. The hiccough and vomiting now gradually abated, and he slowly recovered his health by the use of tonics.

ART. VIII. *An account of several cases of* HYDROPHOBIA, *which occurred at Elizabethtown, N. Jersey, in a letter to Dr.* JOHN B. BECK. By CHARLES DAVIS, M. D. of Elizabethtown.

Elizabethtown, March 4th, 1823.

DEAR SIR,

IN compliance with your request, I subjoin a statement of all the material facts, relating to the cases of rabies which occurred in this borough during the last fall and winter. What

I shall state has in part fallen under my own observation, and in part has been derived from the information of others.

On the 20th Sept. last, a hound bitch, having whelps six weeks old, the property of Mr. R—, who lives a mile from this town, appeared sickly and indisposed to eat. On the 21st in the morning, she was observed to be gaunt, uneasy, wandering about, seemed to have some obstruction in the throat, and ate nothing. It is not known that any rabid animal had appeared in this neighbourhood for some years previous to this date, and there was at that time no suspicion that this dog was mad. Primus, a black man, was bitten about twelve o'clock at noon, in the middle and external part of his thigh, and the teeth of the dog were inserted to a considerable depth. She was irritated by his swinging a bucket towards her as they passed each other. At three o'clock the bitch was in town, and was seen to bite a hog of Mr. Woodruff, and another of Mr. R. Price. At four o'clock she bit W. M. Inman, a boy of eleven years; and at the same hour she is supposed to have bitten a horse of Mr. Hind, which was in town at this time, and near the place where Inman was when bitten. The bitch was seen in company with other dogs in the course of the afternoon, but is not known to have bitten any one, though she snapped at several. She was seen returning to Mr. R—'s between five and six o'clock, and went peaceably in company part of the way with a dog which followed his master. Having returned, she attacked an ox of Mr. R—, and wounded him in the neck and nose. At sunset she was again in town, and was seen leaving the barn-yard of Mr. E. Price; she here killed two pigs, a few days old, wounded one other pig, and is supposed to have bitten at the same time, or in the evening, two hogs and a cow of Mr. Price, although no wounds were discovered on these last, nor were they suspected of having been bitten before the disease was developed. Soon after this she bit a boy, by the name of Smith, in the arm, abraded the skin, but drew no blood. Between nine and ten o'clock in the evening, she wounded Jack, a black boy, deeply in the middle and external part of the thigh, and slightly on his hand,

in several places. At eleven o'clock she made an attack on the swine of Mr. Wm. D. Craig, which were lying in the yard, but no wounds were discovered on them. In the course of the night the bitch is supposed to have bitten a hog of Mr. Freeman, in town; a calf of E. Magie, one mile from town; also, one hog of Jas. Meeker, one of Mr. B. Meeker, and two of Mr. J. Mulford, two miles from town. She was seen on the following morning to bite, in the neighbourhood of Mr. J. Mulford, two other hogs, one the property of Mr. B. Mulford, the other of Mr. Stookey, and was driven from the sty of Thos. Mulford, but his hogs are supposed not to have been bitten. She was now pursued; her appearance and actions giving unequivocal evidence of her being mad; and having been wounded with a pitchfork, died in the forenoon. It was not until the bitch was killed, that people were aware that she was rabid, and having been at large all night, it is impossible to ascertain what other animals may have been bitten. Of the twenty-one mentioned above, ten only were certainly known to have been bitten before the hydrophobous symptoms appeared.

I was called to treat the case of Inman forty-eight hours after the wound was inflicted. I found the principal wound a lacerated one on the internal and fleshy part of the thumb of the left hand, about an inch and a half in length, and not deeper than the skin; it had bled freely. A tooth of the dog had also been inserted in the back of the hand, between the metacarpal bones of the middle and index fingers. There was little inflammation, and I conceived it to be both prudent and practicable to excise the wounded parts. I accordingly did so; making the incision about three lines from the edge of the wound, around it, and into the cellular substance underneath, excising completely the wounded parts of the thumb. The wound between the metacarpal bones was deep, and the excision not so complete. I then cauterized the wound, and applied digestives; these were continued three or four weeks, producing a free discharge of serum and pus. On the same day, the boy commenced taking the Scutellaria, which was

alternated with sulphur every third day, as recommended in the prescription for its use. At least ℥ xxiv. of a strong infusion were taken in a day; an anxious mother urging him to an abundant use of the prophylactic. This course of digestives, scullcap and sulphur, with a proper regimen, was continued between forty and fifty days, and no symptoms of disease have as yet been exhibited in this lad. With the other persons bitten, viz. Primus, Jack, and Smith, there was not so fair an opportunity for excision, and that operation was accordingly not resorted to. Salted pork was applied to their wounds, and continued for fifteen or twenty days, till a very considerable destruction of the soft parts was effected. They commenced two days after being bitten, with the scullcap and sulphur, following the prescription for their use in avoiding the wet, abstaining from animal food, spiritous liquors, &c. The health of these persons continues unimpaired.

On the 4th October, fifteen days after being bitten, Mr. Price's pig, the ear of which had been much torn, was affected with spasms, at times very violent. It was very irritable, and the convulsive motions were excited by the slightest touch. It died on the following day. On the same day a large hog of Mr. J. Mulford, not known before to have been bitten, became rabid to a very violent degree. There was not a moment's intermission to the spasms. The animal jumped up against the sides of the enclosure, gnawed the boards, and bit whatever was presented. It died in four or five hours after the affection was noticed.

On the 9th one hog, and on the 20th another, belonging to Mr. E. Price, evinced signs of unusual affection. Water in these cases produced no peculiar excitement or dread, but they eat and drank nothing. The diseased action appeared confined pretty much to the muscles of the neck, producing constant motion of the head. Almost any thing would excite spasms; a fly lodging on the ear, a straw or a drop of water falling on the back; and occasionally, without any evident cause, they would rear on their hind feet, and be thrown with violence on the ground. These animals were entirely passive, and show-

ed no disposition to bite. They were killed, one on the third and the other on the fourth day of the disease.

On the 14th, a hog belonging to Mr. Freeman, supposed to have been bitten late in the evening of the 21st September, was affected with madness. Its mouth was examined, but no diseased appearance observed. This hog was very irritable; its head constantly in motion, frothed at the mouth, gnawed the fence, and with avidity laid hold of sticks thrust into its pen. It died on the 15th.

On the 14th, another hog belonging to Mr. J. Mulford was affected with madness. It showed no disposition to bite; ate a few apples on the 15th, but drank nothing. It was supposed to have had a peculiar dread of water, from the impossibility of making it approach a small pond in the yard.—This case was not very strongly marked, and the spasms returned at considerable intervals. The hog was shot on the 16th.

On the 20th, a cow belonging to Elihu Price, not known to have been bitten by the rabid dog, was supposed to exhibit symptoms of rabies. She was first observed to thrust her nose into a pail of blood and water; drank no fluids whatever; ate a little solid food, as corn and potatoes, on this day. She never had before shown any antipathy to a dog, but now she made violent efforts to attack every one she saw. Her nose was dry, mouth frothy, and she continued to wander about till the 22d, when she died, seemingly from exhaustion. This case was by some considered equivocal.

About the 25th, two other hogs, one the property of James Meeker, the other of Mr. B. Meeker, and also a calf of Mr. Magie, died, after showing unequivocal evidences of rabies. Neither of these animals were known to have been bitten, but the dog was killed in the neighbourhood, and the disease was strongly marked in them all.

November 1st. The hog of Mr. B. Mulford, which was seen to be bitten by the dog, was killed, after the disease had been developed. The wound was a very large one in the hog's

back. Nothing was done by way of prevention, and the characteristics of the disease were exhibited in a moderate degree.

November 6th. A hog of Mr. W. I. Craig became mad, and on the 7th died. In this case the convulsive actions were not very violent.

About this time the hog of Mr. R. Price maddened, being the second hog bitten. This case was strongly marked: the convulsions were violent: the hog burrowed up the ground to a considerable depth. Water poured near him aggravated the spasms: he gnawed the fence; and, by his loud squealing and other noise during the night, kept the people in the neighbourhood awake. He died on the night of the second day.

November 15th. Mr. B. Woodruff's hog maddened, being the first known to have been bitten. The wound was a slight one on the ear. The hog was very irritable; spasms frequent, but not so violent as in some of the preceding. It died on the 16th.

January 1st, 1823. A horse of Mr. Hinde maddened, and died on the 3d. This horse was in town on the 21st of September, and was tied to a post near the place where Inman was bitten. The horse was supposed to be affected on the first day with some disease peculiar to horses, and medicine was given accordingly; but on the second and third day, the symptoms of hydrophobia were unequivocal.

The foregoing are all the cases in which I have heard that the disease has occurred, and the animals were affected in various degrees, without any reference to the time or order of their being bitten, or to the size and situation of their wounds. Of the fifteen animals affected with rabies, four only were certainly known to have been bitten before the disease was observed. The four persons bitten, with whom the prophylactic treatment was adopted as detailed above, have as yet escaped the affection. The ox bitten in the nose and neck has continued unaffected, though nothing was done in the way of prevention. The hog of Stookey was wounded in the knee-joint of the fore leg, and the wound bled to such a degree as to endanger the life of the animal. The discharge of blood

and synovial fluid continued for some days, and with it the canine poison lodged on the part was probably removed.

I have now, Sir, gone through with the detail of all the circumstances relating to the rabid dog, and the animals bitten by it. I leave it to yourself to draw such conclusions from the facts stated, as you may think rational.

I remain, very respectfully, your friend,

CHARLES DAVIS.

Dr. J. B. Beck.

ART. IX. CASE *of the gradual loss of* MUSCULAR POWER. By JOHN W. GLONINGER, M. D., of Lebanon, Pennsylvania.

On the 15th of October last, I was requested to visit Mr. C—— W——, ætat. 25, whom I found afflicted with a loss of muscular power of the superior and inferior extremities, with considerable difficulty in articulating words, a dilated state of the pupil, a proptosis of the right palpebra and under lip, and the intellectual faculties unimpaired. I desired him to relate the manner in which he was first attacked, and the feelings he experienced. He stated, that five months since, he discovered a numbness and pricking sensation in the inferior extremities, without any diminution of the temperature and feeling, and that he had no command over the muscles of his left leg. Two months after, his superior extremities became affected in like manner, and now speaking was a difficult and painful task. His appetite has always been good, his bowels regular, his sleep undisturbed, and his habits, he assured me, temperate and correct.

Having used a variety of remedies that were recommended to him by several physicians, and believing the seat of the disease to be in the origin of the nerves, I confessedly had very little hopes that a cure could be achieved; but as he was desirous that I should attend him, I purged him every other day

with cremor tartar and jalap, used frictions, rubefacients, applied blisters to his extremities, and established an issue over the third and fourth cervical vertebræ. This course of treatment having been continued some time without any benefit resulting, I despaired even of ameliorating his distressing situation. The young man being from Virginia, on a visit to his uncle residing about five miles from this place, I could not see him daily; but upon being informed that he had been costive for several days, I sent him a dose of calomel, which not proving cathartic, occasioned a slight ptyalism, upon the appearance of which I was rejoiced to learn he was able to walk better. This induced me to give a mercurial pill every evening until he was profusely salivated, when he could walk nearly as well as he did prior to being attacked with the disease. He now complained of some debility, for which I ordered a generous diet and a decoction of colombo. I saw him a few days since, when he informed me that he considered himself perfectly cured, and that he intended returning in a fortnight to his place of residence in the state of Virginia.

ART. X. DESCRIPTION *of a new Species of* RANUNCULUS, *with remarks.* By Dr. LEWIS C. BECK and Mr. JAMES G. TRACEY, of Albany. New-York. Read before the Albany Lyceum of Natural History.

RANUNCULUS *lacustris.* Leaves all submerged, alternate, dichotomously divided into numerous capillary segments; with clasping membranaceous stipules. Peduncles emerging, dichotomous, slightly furrowed. Flowers terminal, large. Calyx spreading, hairy, fleshy, caducous. Petals five to eight, obovate, larger than the leaves of the calyx. Nectary petal-lik cucullate-tubular, nearly equalling the length of the filaments. Fruit oval. Stem floating, branched, glabrous, hollow, round, from two to four feet in length, extending radical fibres from the lower joints. Root fibrous, short.

Habitat. In a stagnant pond near Lansingburgh, on the Hudson river, and in a similar situation near Lewistown, on the Niagara.

Observation. The flowers of this species are bright yellow, and larger than those of R. *bulbosus.*

This plant has been confounded by several botanists with R. *fluviatilis* of Willdenow, and R. *multifidus* described in the supplement to Pursh's Flora of North America; and it now becomes proper for us to give the reasons which have induced us to consider it as distinct from either.

In an edition of Linnæus's Species Plantarum, published in 1796, we find the following description of *Ranunculus aquatilis.* "R. foliis submersis, capillaceis, emersis peltatis." Several varieties of this species are noticed, and among others the following: "R. fluitans, petiolis, unifloris; foliis capillaribus; laciniis divergentibus. *Hall. helv.* 1162."

Some subsequent authors, however, considered this a distinct species, and described it under the name of R. *fluviatilis.* Pursh, Persoon, Nuttall, and others, have followed the division made by Willdenow, whether correctly or not, is still extremely doubtful.

The descriptions of these two species, as given in Pursh, are as follows:

"R. *aquatilis*, foliis submersis capillaceis, emersis peltatis. Willd. sp. pl. 2. p. 1332.

"R. heterophyllus. *Roth fl. germ.* 1. p. 240.

"Icon. Engl. bot. 101. Fl. Dan. 376.

"In ponds and slow flowing rivulets; Canada to New-York, 4 June, July. *vv.* Flowers white.

"R. *fluviatilis*, foliis omnibus dichotomo-capillaceis, caule natante. Willd. sp. pl. 2. p. 1333.

"In tranquil rivers; Pennsylvania to Carolina, 4 June, Aug. *vv.* Flowers white."

From the above, it appears that the distinction between these two species chiefly depends upon the presence or absence of the *peltate leaves.* Indeed in other respects they are so strikingly similar, that it is almost impossible to distinguish

them. Surely, if the botanists above mentioned had ever seen the plant which is the subject of this paper, and had considered it R. *fluviatilis*, they would not have contented themselves with so lame and imperfect a description as is here given, particularly when the species was so doubtful.

In the splendid article '*Ranunculus*,' in Rees' Cyclopedia, from the pen of Sir James Edward Smith, we find that the author considers as a variety of R. *aquatilis*, "the *fluviatilis* of Willdenow, n. 61., *peucedanoides* of Desfont. Atlan. v. 1. 444., figured in Fl. Dan. t. 376," The leaves of this plant, he observes, "are not only in capillary segments, but considerably elongated, by the influence, as we conceive, of the running water in which this sort is always found. The *seeds* indeed are not bristly, in our specimens of this last variety, but naked, as in *hederaceus*, which species agrees with every variety of *aquatilis*, in the corrugations of the seeds as above described."

Hence it is evident, that R. fluviatilis of Willd., if not a variety of R. *aquatilis*, is at least very closely allied to it. But the size of R. *lacustris*, its dichotomous peduncle, and its large, brilliant yellow, terminal flowers, which could not have escaped the accurate and observing eye of Dr. Smith, distinguishes it so completely from R. *aquatilis*, that it never could have been mistaken for a variety of this species. If this reasoning be correct, it follows that R. *lacustris* cannot be R. *fluviatilis* of Willdenow.

By referring to Prof. Bigelow's Forula Bostoniensis, we find the following description:

"*Ranunculus fluviatilis*——River Crowfoot.

"Leaves all dischotomous, capillary; stem floating. *Willd. Syn.* Ranunculus fluitans. *Poir.*

"This is undoubtedly a distinct species from Ranunculus aquatilis, having its leaves all capillary in the stillest water. Its flowers are yellow. Stem long, smooth, furnished at regular intervals with nearly sessile leaves, divided by regular forks into innumerable capillary segments. The flowers only emerge from the water. Peduncle smooth, furrowed. Calyx

leaves fleshy, concave. Petals smaller than Ranunculus bulbosus. Nectaries tubular. Fruit in ovate heads, the seeds ending in a long, sharp point. In a pond on Brighton road, and elsewhere in deep water. June."

If any reliance is to be placed upon the testimony of the botanists before mentioned, and particularly upon that of Dr. Smith, the plant here described by Prof. Bigelow is not R. *fluviatilis* of Willd. as he asserts, but some other species, and probably the one which is the subject of this paper.

Having, as we conceive, conclusively proved that the plant which we have described is not R. *fluviatilis* of Willdenow, we shall next proceed to show that it is not R. *multifidus*, for which it has also been mistaken.

The supplement to Pursh's Flora of North America contains the following description of *Ranunculus multifidus*.

"R. *multifidus*.—R. foliis tripartito, multifidis laciniis incisis approximatis, caule natante, foliolis calycis subrotundis petalis paulo brevioribus.

"In upper Louisiana, Bradbury 4, *v. s.* in *Herb. Bradbury*. Flowers yellow; resembles R. *fluviatilis*."

R. *lacustris* does not agree with the description here given, particularly in the form of the leaves. It will be observed, that Pursh makes use of the same phraseology in describing the leaves of R. *multifidus* that he does in R. *acris*; from which last, R. *lacustris* is, in this respect, remarkably distinct.

The elaborate article "Ranunculus," in Rees' Cyclopedia before referred to, contains the following description:

"*Ranunculus multifidus*.—Many cleft Arabian crow-foot. Forsk. Ægypt. Arab. 102. Lamark Dict. N. 67. 'Leaves many cleft; the lower ones pinnated. Stem many flowered. Calyx the length of the corolla. Seeds ovate acute.' Gathered by Forskall, in ditches near the town of Taes. He describes the *stem* two feet high, erect; round in the lower part; striated above; hairy. *Fruit* oval. We have no other authority than the authors quoted for this species."

The description of R. *multifidus* here given, does not essentially differ from that contained in the supplement to Pursh.

But Dr. Smith, although he constantly quotes Pursh, makes no reference to him on this species. It is therefore probable, nay certain, that he considered R. *multifidus*, noticed by Pursh, a variety of some other species.

Be this as it may, R. *lacustris* is not R. *multifidus* of Lamark, Dict. n. 67, referred to by Dr. Smith, and if the former has been mistaken for R. *multifidus*, it certainly requires a new name.

ART. XI. *Observations on what are termed the* ALLUVIAL FORMATIONS *in the United States; in a letter to* Dr. FRANCIS. By JOHN FINCH, Fellow of the Philosophical Society of Birmingham.

New-York, March 27, 1823.

DEAR SIR,

I HAVE sent you a few hasty observations on what are termed the alluvial formations of the United States, merely with the view of drawing the attention of geologists to the subject.

To trace the connexion between the rocks of different continents, to observe the order of their superposition, and to examine the exterior formations of the earth, are the business and study of the geologist.

The mountain masses which occur in various parts of the globe, obey one general law; and the crystallized rocks which contain no fossils, and are equally called primitive, whether they are observed in Europe, Asia, or America, are constantly found in the same position. When we ascend in the scale of formations, and arrive at those rocks which contain fossils, we find each stratum decidedly marked by the remains of zoophytes, or shells, peculiar to it. These fossils constitute the medals of the ancient world, by which to ascertain the various periods, during which the exterior coat of the earth was consolidated.

It has been observed, that these organized remains occur in so regular an order, that it is like examining a cabinet of

shells, where you are sure to find, in every drawer, those peculiar ones which have been deposited within it.

The order of position among secondary rocks is also seldom inverted. If in one quarter of the world you find a sandstone, containing gypsum and salt, situated above another, containing impressions of peculiar madrepores, in all other countries, where these rocks are found, they preserve the same relative position.

This law is the foundation of geology, on which alone it rests; and every portion of either the old or new continents that is examined, seems to produce fresh evidence of its truth.

In America, an immense tract of country, extending from Long Island to the Gulf of Mexico, and from thirty to two hundred miles in width, is called an alluvial formation, by most of the geologists who have written on the subject, and by some it appears to be considered as an exception to the general arrangement and position of strata, which are found in other countries.

From an examination of fossils brought from that quarter of the United States, and the perusal of most of the publications which bear a reference to it, I wish to suggest, that what is termed the alluvial formation in the geological maps of Messrs. Maclure and Cleaveland, is identical and contemporaneous with the newer secondary and tertiary formations of England, France, Spain, Italy, and Poland.

Although to place the subject beyond dispute, it would be necessary personally to examine all the various fossils from each separate stratum, and the formations on the spot where they occur, yet still sufficient evidence may be collected to place that extent of country in a different point of view from that in which it seems to have been hitherto regarded.

In the first place, the opinion that it is alluvial or deposited by the ocean, or rivers, at a comparatively recent period, seems quite inadmissible. The eastern shores of continents are more liable to lose than gain from the ocean, and there are no rivers on that coast which could have deposited such an accumulation of sand and marle.

In strict geological language the term alluvial can only be applied to the depositions which take place on the banks, or at the debouchure of rivers, such as are formed by the Ganges, the Nile, the Danube, and the Mississippi, the extent of which is easily ascertained by a correct map. Smaller rivers, such as occur more frequently on the Atlantic border of the United States, do not in centuries deposit sufficient sand to alter the geographical features of a country.

The following description of strata, found near the Atlantic, are extracted chiefly from the publications of Mr. Maclure, Dr. Mitchill, and Mr. Hayden. I have added the strata in England, to which they may probably be referred.

A bank of shell limestone is found in North Carolina, parallel to, and within twenty or thirty miles of the primitive rocks. It passes through South Carolina, Georgia, and part of the Mississippi territory. Large fields of the same formation are found near Cape Florida, and upon the coast of the Bay of Mexico. This is a newer secondary stratum of great extent: an examination of its fossils would identify it, most probably, with some of the oolite family of the old continent.

Considerable deposits of bog iron ore occupy the lower situations in New-Jersey, and many of the more elevated and dividing ridges are crowned with a sandstone and puddingstone. Quantities of ochre, from bright yellow to dark brown, are found in abundance in this formation, in flat horizontal beds.

This formation agrees with the ferruginous sand of England, which is superior to the oolites.

In Virginia, the shore, and a considerable extent inland, are covered with a fine white sand. This is probably the sand connected with the upper marine strata.

In the banks of James river, Va. there is an abundance of organic remains imbedded in a bank of clay. At Richmond are found triangular teeth, apparently of sharks, and pieces of bones, belonging to whales, at a distance of sixty feet

from the surface. Above these were found bark and wood, and the remains of a small quadruped.

All these are the fossil remains which distinguish the London clay formation. From the same spot I have seen fossil shells similar to those which are deposited in the collection of the Geological Society in London, and which were obtained in the deep excavations at Highgate hill.

At Washington, under the mass of diluvian gravel, of which the higher part of the Capitol Hill is composed, is a stratum of clay, which contains many organic remains. Trunks and branches of trees are found at a distance of fifty-four feet from the surface. Further down the river, in digging wells, sharks teeth are found. This also belongs to the London clay.

Near Williamsburg, fifty miles from the Atlantic ocean, the skeleton of a large fish was discovered; amongst other parts, fragments of the ribs, and all the vertebræ were found, regularly arranged.

In Italy and other countries, the same phenomena have been observed, and a careful examination would establish the similarity of the strata in which they were found.

On the banks of York river is a high cliff, containing strata of shells not at all decomposed, and interspersed with layers of earth. A careful examination of the species, would determine whether they belong to the upper marine, or upper freshwater formation.

Nearly the whole of Long-Island, at the depth of thirty to fifty feet, consists of a stratum of marine sand and gravel, in which are various shells, venus, ostrea, and murex. In the same stratum are found boughs and trunks of trees, bark, and damaged wood.

This is probably the same formation which is found superior to London clay, at Bagshot heath, and the coast of Essex.

Many more instances might be adduced to establish the indentity of what has been called the alluvial district of America, with the recent formations of England and the continent of Europe; but the object of this present slight sketch is merely to draw the attention of geologists to this subject. It is proba-

ble that upon an accurate investigation, the country between the Alleghanies and the Atlantic would be found to consist of eight or ten distinct formations, agreeing precisely in their general character with the newer strata in England.

The fossil shells from the various beds, would, perhaps, not all be precisely similar to those in England; but a sufficient number would be found so, to establish their relation and their order of succession.

The fossil shells from these various strata, preserve their angles and sharp tender edges unbroken. The skeletons of fishes and animals which are found, are many of them entire. They must have been deposited from, or resided at the bottom of a tranquil ocean.

After the production of these regular strata of sand and marle, came a terrible irruption of water from the north, or north-west, which, in many instances, covered the preceding formations with diluvial gravel, and carrying along with it those immense masses of granite, and the older rocks, which attest to the present age, the destruction and ruin of a former world.

Believe me, dear sir,

Most sincerely yours,

J. FINCH.

Dr. J. W. Francis.

REVIEW.

A Comparative View *of the* Sensorial *and* Nervous Systems *in* Man *and* Animals. By John C. Warren, M. D. Professor of Anatomy and Surgery in the University at Cambridge. Boston, 8vo. pp. 159. 1822.

No subject has more closely riveted the attention of philosophers, or more completely eluded their research, than that principle which gives to man his pre-eminent rank in the scale of being, and which has put into his hands the power as it were of perfecting his nature, and of controlling his own destinies.

The nervous tissue is that upon which the dictates of common sense and the concurring opinions of every age, have consented to locate this mysterious attribute of existence. Though this was the almost universal sentiment from immemorial time, and long before the structure of the body or the uses of its different parts were understood, the knife of the anatomist has brought nothing to light by which that opinion could be controverted. Analogies on the other hand tend to confirm it. The peculiar provisions which are found to have been made to guard this tender and curious tissue in a firm and bony casement, the distribution of its substance to every organ and system of the body, and the immediate derivation of the senses from the encephalon, together with the important part which this tissue performs in the organization of almost every other animal, conspire to show that it is the great and ruling fountain of life and thought.*

* In the late work of a distinguished writer, Dr. Pritchard, we have some striking observations on the difficulties with which our inquiries into a knowledge of the nervous system are necessarily connected.—

Its duties have been supposed to be divided between the mind and body, furnishing the one with intelligence, and the other with those vital movements by which its existence is sustained. But in what manner these functions thus blended together in the same common substance perform their separate offices, or which is the appropriate place occupied by each, is a problem which in all likelihood will never be solved. Above all, it would be desirable to know from what part of it more especially is derived the principle of intelligence belonging to the great mass of animated matter, and that still higher power of ratiocination, which in so eminent a degree distinguishes man from all other animals. It is here the terra incognita, where anatomy ends, and where metaphysics begin.

After all the minuteness and fidelity with which the brain and nerves have been dissected and displayed; after all that the scalpel, aided by the co-operation of chemical and microscopical experiments, has done to demonstrate their structure; and notwithstanding that so much light has been thrown upon every other part of the living machine, this its most conspicuous, and probably most essential portion, is yet involved in deep mystery. None, however, can deny that the stupendous efforts of the illustrious Cuvier and his distinguished coadjutors have done much towards lessening the grounds of this interesting inquiry. By a close inspection of the organization of the different classes of animals, they have proved, that the principle of intelligence, or what is generally denominated the common sensorium, resides in that part of the tissue which is in the immediate vicinity of the primary organs of sense, whether it be in the brain, as in vertebrated animals, or in the nervous collar surrounding the œsophagus, as in most of the higher classes of the invertebrated animals. That the intellectual functions, however, and which constitute, if we may so express it, the intelligent principle, are intimately and es-

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"Anatomy and Physiology here stand aloof from each other, and seem to disclaim all alliance."—See Dr. Pritchard on the Diseases of the Nervous System, introductory chapter, London. 1822.

sentially allied to what may be termed the animal functions of the nervous system, seems to be the fact from the circumstance, that those parts of that system to which these functions have been respectively assigned, apparently co-exist and disappear together. In the zoophytes, or lowest class of animals, no nervous system has been discovered. We must either suppose, therefore, that it exists in these animals in so attenuated a state as to be invisible, or be obliged to refuse to them the principle of intelligence altogether. The latter opinion is more improbable than the former, although it must be confessed, that the apparent destitution of organs of sense, and the simple condition to which life is reduced in such animals, do not seem to warrant the existence of an intelligent principle, or of a nervous system. That the principle of intelligence, however, is more and more developed in proportion to the developement of the nervous system, is, we are inclined to consider, a well-founded truth. In what this developement precisely consists is not positively determined, though it would seem in its perfect state to depend upon that part of the organization of the brain connected with its posterior lobes.

Lamarck, impressed with the importance of this part of the organization, divided animals into *apathic*, *sentient*, and *intelligent*. We cannot, however, consent to adopt this classification, however ingenious it may at first view appear; because this division presupposes in the first or lowest class, [apathic,] a total destitution of nervous excitability, which is not yet by any means proved. While in the two others it takes for granted the existence of two different sets of functions in the nervous system, which we conceive are derived from one and the same source, and cannot with propriety be separated. We would be much more disposed to assume the broad basis of demarcation which, without any special knowledge of anatomy, has been suggested to the ordinary apprehension of mankind; we mean the division of animals into two classes, *reasoning* and *instinctive;* for it is the power of ratiocination, in other words, the capacity of progressive improvement and enlargement of the mind, and the empire which this faculty

gives to man over the inanimate as well as living objects of creation, that places him at an immeasurable distance from the rest of the organic world, and entitles him, of right, to be put into a rank by himself.

Instinct, on the contrary, which is so feeble in man, and the predominant function of brute intelligence, is ever stationary. Its laws are as unchangeable as the germ itself by which the species is propagated. Cuvier ingeniously compares its effects to that of a dream ; and remarks that animals, when acted upon by its impulse, may be looked upon in the light of somnambulists. By its unerring guide, animals are congregated together into associations for mutual benefit, and taught to live, as it were, in social compact. Such is the precision with which these movements are conducted, and the results which they produce, that one would be almost ready to admit that they were preceded by a voluntary employment of thought, and a comparative judgment of the relative force of individual ability, and of multiplied exertion. But these phenomena are the effects of a blind impulse, which never changes from age to age, and the direction of which is as independent of the animal, as the mechanism of the automaton from the pulleys and weights by which it is set in motion.

But as nature never annihilates an organ or system, without leaving behind some trace or relic to pepetuate its loss, so also may the rudiments of reasoning be said to exist in instinctive animals. There are none of them that do not possess individually the ability of reasoning to a certain limited degree, and of devising certain means or expedients to accomplish their purposes, in situations and on occasions where instinct could, perhaps, have had no share in influencing their actions.

There has not been found to exist in the human brain any striking peculiarity of organization to correspond to the force, extent, or superiority, of its intellectual functions. Its formation is said, indeed, to differ in no respect whatever from that of the quadrumanes. But as several of the most essential functions of the body have been ascertained to depend on nerves whose minuteness and delicacy render it almost impossible to trace

their distribution, so also may some of the most important parts of the encephalon have possibly escaped the observation of anatomists. This suggestion will appear still more probable, when it is borne in mind that no one has hitherto been enabled to designate the uses or offices of any part of this extremely complicated organ.

To supply this desideratum, recourse has been had to the conformation of the cranium, and to the relative weight or magnitude of the cerebrum, cerebellum, and medulla oblongata, in different animals. The researches of Haller, Soemmering, Camper, Cuvier, Gall, Spurzheim, Lawrence, &c. prove that these experiments, like the analagous attempts of others, to determine the momentum of the blood by arithmetical computations and the laws of hydrostatics, do not lead to any satisfactory results.

A method has been proposed by Cuvier, which promises greater success, but which seems to render it quite uncertain whether the intellectual priority of man ought to be at all attributed to any particular formation of the brain.

Persuaded as we are, that the structure of this organ, however closely it may seem to resemble that of the quadrumanes, will hereafter be found to possess some notable and characteristic peculiarity different from that of every other animal, we are nevertheless bound to receive with the utmost deference an opinion warranted by such high authority as that of the distinguished naturalist of whom we have just spoken.

The method proposed by Cuvier has the recommendation also of being in accordance with proverbial experience. It takes for granted that the superiority of the intelligent principle does not of necessity depend on the absolute bulk, weight, or configuration of the brain, or of its component parts, nor upon its relative magnitude to the rest of the body: but upon the *proportional* developement of certain primary organs of sense when compared to the encephalon. The brain, for example, being considered as unit, the proportional developement in the organs of sense will determine the relative force and capacity of the intelligent principle in the different

classes of animals. To illustrate this method, and as a criterion of this presumed law, we may make a vertical section of the cranium and face, and compare the extent of superficies occupied by the organs of sense with that covered by the brain. This ingenious scheme will be found to hold true in all the different tribes of animals which possess a nervous system sufficiently complex to admit of the comparison. It has a decided preference over that of the measurement of the frontal projection and facial angle. It may be said to have resuscitated to a certain degree the physiognomical and popular theory of Lavater, which, though forced to yield for a time to the cranioscopical and craniometrical systems of Gall, Camper, and others, would seem to have been founded on a basis as rational as those by which it had been supplanted.

We took up the discourse of Professor Warren, under the full persuasion that the information it contained would have tended to throw some light on the difficulties which embarrass this investigation. From the favourable specimens we had already received of the talents and industry of the author, we felt assured that we should be well rewarded for the perusal of his pages. Much as it would grieve us to be accused of a disposition to find fault, or to indulge in the spleen of criticism, where there was opportunity to bestow praise, we regret to say, that flattering as were the auspices under which we commenced the reading of the book, we have been in many respects greatly disappointed.

The work of Dr. Warren embraces one hundred and fifty-nine pages, of which the greater portion consists of matter extracted from the writings of Cuvier, Lamarck, Soemmering, Home, and others. Of the part of his work which thus belongs of right to others, we shall say but little, as it has already been examined and re-examined by persons much more competent than ourselves to decide on its merits. Dr. Warren has apparently endeavoured to put the substance of this borrowed information in his own language, which is generally chaste and perspicuous. Certainly it would be no easy task for Dr. Warren to improve the precise, emphatic, and elo-

quent diction of Cuvier, or the perhaps still more fascinating style of Lamarck. We should have been more pleased if Dr. W., while he was at this undertaking, had given us at once a literal translation of the introductory chapters of Cuvier, instead of forcing that great author to cramp himself up into the measure which the Doctor himself has chosen to adopt. This would have rendered the Doctor's book a valuable elementary abstract of comparative anatomy and zoology; instead of which, it is now confined to a sketch of the nervous system.

Though Dr. Warren acknowledges that his opportunities of investigating the subject of which he treats have been limited, he nevertheless ventures to dissent occasionally from the classification of the animal kingdom as made by Cuvier.

After having gone through with an analogical digest of the anatomy of the nervous system in different animals, the author closes this part of his work with several conclusions.

The author now takes up the subject of the varieties of the human species, and despatches this momentous topic in a very few pages. Brief as Dr. W. is on this point, and however thorny the question may have proved in the hands of others, he does not hesitate to give us promptly the following opinions:

"From all these facts, it is obvious that no distinct boundary lines can be drawn between the different varieties of the species, since they are on each side passing by imperceptible grades into each other.

"All the variations in the form and colour of man are to be ascribed to the gradual operation of moral and physical causes, acting for a great length of time. These causes are, difference of climate, food, habits, and the propensity modified by these causes, which all animals have to vary the form, size, colour, and disposition, of their offspring. The opinion that they are to be explained by supposing half a dozen different origins, is scarcely maintained by any one; and affords no better solution of the cause of all the varieties, than the belief that all have sprung from one common stock." p. 93.

There is a section of Dr. Warren's work both new and interesting, and for which we most cheerfully acknowledge ourselves to be highly indebted to the author. It is his *Account of the Crania of some of the Aborigines of the United States.* We shall make a copious extract from this section.

"The intimate connexion between the form of the cranium and of the brain has led me to the examination of crania of various individuals and races; the result of the examinations of such as are peculiar, especially those of our own country, I shall relate here.

"The crania represented in plates sixth and seventh were those of Indians of Columbia river. They were brought here by the direction of Colonel T. H. PERKINS of Boston, a gentleman very distinguished for promoting scientific and patriotic objects; by him they were given to my friend and colleague DR. CHANNING, to whom I am indebted for this opportunity of representing them. Since these were engraved, a number of others have been received, one of which is more flattened than the one shown here, and equals in this deformity the Carib skull in the collection of Mr. CLINE.

"The specimen in plate sixth may be considered a well characterized cranium of the Indians west of the Rocky Mountains, when in its natural state. There is, behind the coronal suture, a depression deep and extensive, of a circular form, running parallel to the suture. That this is the effect of pressure I would not venture to assert, as I have noticed the same depression, nearly in the same degree, in the skull of a white American; and those who have been in the habit of of examining crania, well know that the transverse depression behind the coronal suture is sometimes considerable. In other respects there is no distortion from the natural state.—The forehead is more narrow than in any skull in my possession, except the African, and is much depressed. The orbits are of great size and of a quadrangular form, the space between them narrow, the superciliary ridges depressed. The ossa nasi narrow and short, yet less so than in the African. The opening of the nostrils ample. The malar bones project considerably beyond the upper edge of the orbit and are enormously spread in a lateral direction. The upper jaw is more prominent than in the Caucasian, less than in the African head, and the alveolar edge flattened in front. Viewed on the vertex, the temporal fos-

sæ are seen to be deep and the zygomatic arches to project widely from the side of the head, exceeding greatly in this, any skull I have examined. The posterior part of the vertex is prominent. The palatine fossæ are spacious, principally from the breadth of the horizontal plate of the os palati, which is from before backward, nearly double that in the European. The foramen magnum, the posterior openings of the nasal fossæ, and the foramina in the base, are none of them remarkably large. The processes are not strongly pronounced : a fact leading us to suppose the head to have been that of a female. The capacity of the cranium is obviously small : the area of the face great, especially towards its sides. The teeth are worn smooth, though they indicate the subject to have been young.

" Plate seventh, represents the skull of a flat head Indian, distorted by pressure. This head is large, the bones weighty, and its whole appearance massive and indicative of a large bony frame. Measured from the junction of the ossa nasi with the os frontis to the posterior edge of the foramen magnum, it gives 14½ inches : the circumference of the cranium immediately above the orbits is 22 inches, so that in these dimensions, it is scarcely less than a common European skull. The face is very broad and all its parts large. The superciliary ridges are more prominent than common ; the orbits large and quadrangular ; bones of the nose large, long, and strongly turned to the right ; the nasal orifice large ; nasal spine sharp and long ; alveolar arch large and flattened in front. Malar bones high and broad. The forehead is spacious in a lateral direction, and strongly bounded by the temporal ridges. Above the superciliary eminences it is much flattened, and rises in front of the coronal suture ; behind this part is a deep circular indentation, resembling that in plate sixth, at one part of which near the vertex is a pit, a quarter of an inch deep. The parietal protuberanccs are pushed out of their usual situation, that of the right side being thrown outward, so much as to overhang the mastoid process: while the left is pushed inward toward the middle line. The inferior occipital region is spacious ; foramen magnum of a moderate size. The posterior nasal openings and all the foramina large. Palatine fossa deep yet not extended backward, the horizontal plate of the palatine bones not being broader than in the European. The measure across the base from one zygomatic

arch to the other, is 6 inches ; which is more than in other heads of any race. The teeth indicate a subject of about 45 years.—They are worn to the bony interior.

" In my possession is the lower jaw of a savage of the north-west coast, brought here some years since, which corresponds in its dimensions with this cranium. It is of great size, but its main peculiarity lies in the teeth ; 14 are in their places and without blemish, yet all worn into the bony substance. The dentes sapientiæ have disappeared, and their alveoli are so perfectly obliterated, as not to leave a trace of their having existed—a fact shewing the great age of the subject. This jaw was taken from a native, a man above 80 years old, who had formed a conspiracy to seize an American ship on the coast ; his band, being on board for the purposes of trade, suddenly attacked the crew, the master of the ship was killed by this savage, who was himself slain, his party overpowered by the crew, and his jaw brought home as a trophy.

" All the appearances in the distorted parts of this head tend to prove that the pressure had been applied at an early period of life.

" An examination of these heads has led me to a comparison with those of the aborigines of our own country ; at least such as I could obtain ; but as the natives of these districts have been long since extinct, and their mode of depositing the bodies in the earth without a covering, exposed them to speedy decomposition, it is not easy to have their bones in a perfect state.—Of three in my possession, one was some years since discovered in digging the foundations of a house at West Boston ; another was found at the pininsula of Nahant, fifteen miles from Boston, amidst a group of Indian skeletons, buried, as was their custom, in a sitting posture on a pleasant eminence. It had undoubtedly lain there many centuries. Both of these skulls exhibit the character of the American race ; the high and spreading cheek bones, large quadrangular orbits, wide nasal aperture, and flattened alveolar ridge. They differ from the Columbia skull, plate sixth, in the greater developement of the cranium, and flatness of the face. The superior maxillary bone in the Nahant skull, projects little more than in the European : the forehead is slanting yet broad, and rises gently to the vertex, which is quite elevated. This cranium is ample across the parietal protuberances, and the measure from the root

of the ossa nasi to the posterior edge of the foramen magnum equals that in the European. This foramen and the others in the base of the cranium are not large ; the palatine fossa is of small extent in which it differs from the West Boston head. The space betweeen the orbits is wide : and all the characters of this cranium except the slanting forehead, those of what has been called an intellectual head. In a third head procured for me by Dr. Parkman, from the heirs of the late Dr. Bentley of Salem. said to have belonged to an Indian Sachem, the malar bones are elevated and spread as in the American ; but the forehead is narrow like the African : the region of the vertex is however more developed than in the latter." 129—135.

The explanatory plates attached to these descriptions are very valuable, and their execution creditable to the exertions of the author to diffuse information on this interesting inquiry. There are also four other plates to illustrate the steps of degradation in the nervous system of invertebrated animals, all of which are beautifully engraved, and taken from the author's own dissections. They consist of the lobster, oyster, leech, and centipede. Perhaps it would have been better to have made his illustrations from species less familiarly known ; though it would appear by the following observation, that a peculiarity of considerable importance in the anatomy of the leech, which has escaped the notice of Cuvier, had been observed by Dr. Warren.

" For a specimen of the nervous structure in the class of red-blooded worms, we shall take an animal generally known, the leech, hirudo medicinalis. Its nervous system is principally composed of a nervous cord knotted, with ganglia, extending the whole length of the body, *contained in and covered by the abdominal blood vessel.* The latter fact led M. Cuvier, I suppose, to say that the coat of this nerve is black, for the red coat of the blood-vessel, which invests it, assumes a blackish appearance on immersion in alcohol ; but the coat of the nerve, so far as I have noticed, has the same white appearance as of other nerves."

Medical and Philosophical Intelligence.

DOMESTIC.

Notice *of Alum Slate, Sulphuret of Zinc, Anthracite and Limpid Quartz.* By James Hadley, M. D. Professor of Chemistry and Materia Medica, in the University of the State of New-York.

Slate is the prevailing rock of an extensive tract of elevated country, whose waters pass off in different directions to Lake Erie, Allegany, and Genesee rivers. In many places, this rock is impregnated with iron and sulphur, constituting alum slate. An important locality of this variety of slate occurs on Cataraugus creek in the town of Concord. The creek here, for a considerable distance, appears to have cut its deep channel through the horizontal strata forming precipitous banks of great elevation. The edges of the strata, exposed to the influence of atmospheric agents, are constantly undergoing decomposition, forming at the same time the sulphates of alumine and iron. In dry seasons, or where protected from the rain, the rock becomes covered with an incrustation, or an efflorescence of the above salts, which at length falling down, is accumulated below, or swept away by the current of the stream.

It is not improbable, that the alum slate occupies a considerable portion of the country. It has been noticed as far east as Genesee River, and on the banks of some of its tributary streams, and west nearly to the county of Chatauqua. It rests upon the common secondary limestone of the country, and it is not known that it is overlaid by any other rock.

Fine specimens of alum have been obtained from this mineral, which furnishes great facilities for the manufacture of that article in the large way. The ore appears to be inexhaustible, and of such a quality, that it undergoes the necessary decomposition by mere exposure to the atmosphere, while ores of this kind frequently require the process of calcination, to prepare them for the extraction of the alum. From these considerations a doubt

can hardly be entertained, that this ore will prove a valuable addition to the mineral resources of the state.

Sulphuret of Zinc is found on the farm of Judge Hurlbutt in the town of Salisbury, Herkimer county, about half way between the West and East Canada Creeks. The vein, which also contains sulphuret of iron, was discovered a number of years ago, and was explored a few feet below the surface, with the expectation that it contained silver. The ore is situated in sand stone on the north-eastern declivity of elevated ground, which terminates the secondary region in that direction. To the southwest is limestone containing organic remains, and on the other hand gneiss soon makes its appearance, which is the prevailing rock of the mountainous country towards Canada and Lake George. An attempt is now making to open this vein by passing horizontally into the side of the hill, in such a manner as to strike it at right angles. Anthracite in small veins is found, traversing the sandstone and also disseminated in the rock. Large imperfect crystals of quartz, frequently coloured with iron or enveloping anthracite, are met with between the strata or in fissures, and in geodes smaller but more perfect specimens occur: the same formation of sandstone, overlaid by limestone and resting upon gneiss, and accompanied with anthracite and limped quartz, appears also on the West Canada Creek and the Little Falls of the Mohawk. Hitherto but small quantities of anthracite have been found at either of the above places. The most elegant specimens of limped quartz are obtained on the West Canada Creek about seven miles from its junction with the Mohawk River.

Pulmonary Consumption.—Extract of a letter from Dr. T. R. Beck *of Albany, to the Editors.*

I had lately a conversation with a very intelligent gentleman (not of the profession) who removed into the western part of this state, some fifteen years since, at a time when the extreme parts where he settled, were generally covered with forests. He remained there until the last year, and has thus been a witness of the change from a state of nature, to high comparative improvement.

In the course of his remarks, an allusion was made to the great increase of consumption generally; when he observed, that during the whole period of his residence in the western district, until

within the last two or three years, that disease was unknown ; and individuals coming from the New-England states, with all its indications, were completely relieved, or as is the common opinion *cured.* This observation was made in numerous instances. As the ground is clearing and villages are forming, this exemption is now no longer experienced. During the above period, remittents and intermittents were the common diseases.

These facts certainly go to prove the idea advanced some years since by Dr. Wells, corroborated by observations made in Holland and Lincolnshire, of the apparent incompatibility of intermittents and consumption. And I have stated these remarks, with the hope that the subject may attract the attention of some of the physicians that have resided in the western part of this state, during the period indicated above. They are certainly able to elucidate this highly important question.*

Singular Case of Delivery of Twins. By F. U. Johnston, M. D. of New-York.

Dear Sir,

If the singularity of the following case should render it worthy a place in your Journal, please insert it,

And oblige yours, F. U. JOHNSTON.

Dr. John B. Beck.

July 6th, 1822, I was called to Mrs. A——, in labour for the fourth time. She stated that formerly she had miscarried at the eighth month, and that she supposed herself now to have arrived at that period of her pregnancy. On examination, found the os uteri dilating, but could not ascertain the presentation ; pains at regular intervals and strong. Matters continued in this state till about 10 P. M. The os uteri was now found fully dilated, the membranes protruding through it, but no part of the child to be felt ; the pains had for some time been irregular and weak. Finding them failing and labour stationary, I gave her anodyne, and retired to rest. She had no pains during the night, and slept well till nine next morning, when they recommenced, and increased in force till

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* In the very valuable paper of Dr. Ludlow on the Genesee county, contained in our present number, will be found some highly interesting facts on this subject. —*Editors.*

5 P. M., when a head was protruded with its face to the pubes. Her pains continued to recur with increased strength and frequency, but to my surprise the head remained stationary; on passing a finger along the neck of the child, nothing could be felt in the pelvis but a few of its spinous processes, its body was out of reach, and its neck clung close to the arch of the pubis. Notwithstanding violent pains, it remained immoveable about three quarters of an hour, when, on introducing a finger, another set of membranes was felt advancing, and before I could withdraw my hand, another head was protruded with the face to the sacrum. Another pain expelled this last child; and in about fifteen minutes the one whose head had been so long protruded, followed, together with the double placenta. The child last born was dead, and had the appearance of having long been so; the other was small, but alive and healthy. The mother did uncommonly well.

Remark. It appears that the body of the dead child was prevened from descending into the pelvis by the pressure of the head of the other, (which must have lain obliquely across the womb from behind forward) against the upper vertebræ of the back, along which it was gradually forced by each successive pain, each inch of progress rendering the descent of the other more impossible, till finding no resistance from the thin and elongated neck, it actually passed it in the pelvis.

Case of Compound Pregnancy. By Gerard Banker, M. D. of New-York.

In the last number of the New-York Medical and Physical Journal, I find detailed the history of an interesting case, in which four children were produced at a birth. The following case of a similar nature having fallen under my care, I beg to communicate it for insertion in your next number.

Margaret V——, a coloured woman, aged twenty-five, had been married five years, and had been the mother of two children. During the last year she again conceived, and between the second and third month of utero-gestation, aborted, in consequence of an injury which she received. Hæmorrhage now took place from the uterus, and pains came on regularly. During this period four fœtuses were passed at intervals of two and three days. The

fœtuses were perfectly formed, and two of them are at present in my possession. The woman remained for some time in a very debilitated condition, but eventually has recovered her health perfectly.

The Monthly Journal of Medicine.——A Medical Journal under this title, has been commenced at Hartford, in the state of Connecticut. It proposes to embrace selections from European Journals, the transactions of learned societies, together with a concise analysis of the medical journals of the United States. The plan is a novel one; and judging from the two first numbers which we have examined, we are disposed to believe that it will prove extensively useful. The names of the editors do not appear; but if common rumour may be relied on, our friend Dr. TULLY is engaged in the enterprise, than whom we know of no person who from his acknowledged abilities and general acquirements, is more likely to ensure character and perpetuity to such a work.

University of the State of New-York.—We are happy to announce that the two Colleges of Physicians and Surgeons, attached to the University of the State, continue in a prosperous condition. During the past session, the College in New-York has numbered *two-hundred* and *one* students, and the college at Fairfield *ninety-one*, making we believe a larger amount of medical students than we have yet had in this state in any previous year. The graduates in New-York amount to forty-seven; those of Fairfield, are eight. The following is a list of their names, together with the subjects of their respective theses.

Graduates in the College of Physicians and Surgeons, City of New-York, 1823.

NOVA-SCOTIA.

1. WILLIAM HUNT, *on Cruritis.*

MAINE.

2. GALEN CARTER, A. B. *on Pneumonia Typhoides.*

VERMONT.

3. SAMUEL R. CHURCH, *on Aneurism.*

NEW-YORK.

4. JOHN W. BAY, *on Pertussis.*
5. WILLIAM B. BROWN, *on Cold.*

6. Walter Booth, *on Phrenitis.*
7. John S. Cornell, *on Fungus Hæmatodes.*
8. Charles Cleeve, *on the Lycopus Virginicus.*
9. John W. Freiot, *on Diabetes.*
10. George E. Harral, *on Ophthalmia.*
11. James H. Hart, *on Antimonium Tartarisatum.*
12. Frederick W. Jenkins, *on the Spontaneous Evolution of the Fœtus in Utero.*
13. Andrew Hamersley, A. B. *on the Peculiarities of Chronic Disease.*
14. Hudson Kinsley, *on Hydrocephalus.*
15. Edward Greenfield Ludlow, *on the Lake Fevers of the Genessee Country.*
16. Benjamin M'Vickar, *on Counter-Irritation.*
17. William Molenaor, *on Impregnation and the Nourishment of the Fœtus in Utero.*
18. Robert Kortright, A. B. *on Ophthalmia.*
19. Jonathan Norton, *on Cruritis.*
20. John L. Suckley, A. B. *on Secretion as a source of Pleasurable Sensations.*
21. James Stewart, *on the Medical Knowledge of the Aborigines of North America.*
22. Henry R. Stagg, *on Trachitis.*
23. Peter Van Beuren, *on Cold.*
24. Marinus Willett, Jun. A. B. *on Ulcus.*
25. John W. Vethake, *on the Proximate Cause of Fever.*

New-Jersey.

26. Thomas B. Gautier, *on Phthisis.*
27. Jabez Gwinnup Goble, A. B. *on the Medical Character of the United States.*
28. Enoch Lee, *on Phthisis Pulmonalis.*
29. Edward Macomb, A. B. *on the Mercurial Practice in the treatment of various diseases.*
30. Christian Brevoort Zabriskie, *on Paralysis.*

Pennsylvania.

31. John P. Geddes, *on Hæmoptysis.*

Virginia.

32. Robert T. Coles, *on Ischuria.*

NORTH CAROLINA.

33. ABNER HOPTON, *On Anaphrodisia.*
34. THOMAS H. WRIGHT, A. B. *on the Progress of Chemistry.*

SOUTH CAROLINA.

35. JOHN P. GUIGNARD, *on Phthisis.*
36. THOMAS JEFFERSON GOODWYN, A. B. *on Cynanche Trachealis.*
37. EDMUND B. HIBBLER, *on the Pulse.*
38. GEORGE A. HUGHES, *on Trachitis.*
39. COTESWORTH PINCKNEY, A. B. *on Apoplexy.*

GEORGIA.

40. EDWARD A. BRODDUS, *on the Secale Cornutum.*
41. THOMAS C. BROWN, *on Icterus.*
42. BENJAMIN F. GREEN, *on Hepatitis.*
43. DAVID L. SPARKS, *on Anasarca.*
44. ROBERT N. TAYLOR, *on Diabetes.*

TENNESSEE.

45. JOHN O. EWING, A. B. *on Cholera Infantum.*
46. JOHN M. WATSON, *on Epilepsy.*

WEST INDIES.

47. PETER DYKERS, A. B. *on Emetics.*

Graduates at the College of Physicians and Surgeons of the Western District, at Fairfield.

1. BRYANT BURWELL, Norway, Herkimer county, on the *Local Origin of Fever.*
2. ELIAS W. FRISBIE, Phelps, Ontario county, on *Marsh Miasmata.*
3. WILLIAM HOLLAND, Johnstown, Montgomery county, on the *Tests of Arsenic.*
4. ALLAN H. HOWLAND, Geneva, Ontario county, on *Digestion.*
5. JOHN LUSK, Canaan, Columbia county, on *Tussis Stomachica.*
6. GEORGE W. PALMER, Waterville, Oneida county, *on Concussion of the Brain.*
7. ELI PIERCE, Guilford, Chenango county, on *Pertussis.*
8. WALTER WEBB, Adams, Jefferson county, *On Fever.*

FOREIGN.

Observations on the Kind of Death produced by the Nux Vomica. By M. Segalas, d'Etchepare, Private Professor of Physiology and Pathology.

The following are M. Ségalas's remarks upon this subject :—

" 1st. If we take two Guinea pigs, and produce asphyxia in one, by strangulation, whilst, at the same time, we inject into the bronchiæ of the other two or three grains of the alcoholic extract of nux vomica suspended in a spoonful of water, the poisoned animal is immediately seized with a tetanic rigidity, and seems almost deprived of sensibility and motion, whilst the animal in a state of asphyxia preserves the power of motion and sensibility for several minutes.

" 2dly. If, in order to place both animals under similar circumstances, with regard to the fluid introduced into the air passages, we inject into the bronchiæ of that which is affected with asphyxia a quantity of water equal to that which serves as a vehicle for the poison, the difference in the death is little less striking.

" 3dly. If, in order to be still more satisfied that the respiration of both animals is placed under perfectly similar circumstances, we begin by decapitating them, and inject into the two tracheæ an equal quantity of poisonous and of pure water, death by poisoning occurs still more speedily than that by asphyxia, and the distance between them is greater or less, according to the precautions which we may have taken in order to prevent or diminish the hæmorrhage produced by the operation.

" 4thly. We may, to a certain point, extend, at will, the interval between the two deaths, by establishing artificial respiration in both animals, immediately after having decapitated them, and injecting a strong dose of the poison into the cavity of the abdomen of one of them. The latter, under such circumstances, dies almost instantly, whilst the other survives twenty, thirty, forty minutes, more or less, in proportion to the care which we take in endeavouring to prevent the effusion of blood, and to keep up the natural respiration."

From these experiments, which he repeated several times before his pupils, M. Ségalas concludes, in opposition to M. Magen-

die, who was of opinion that the nux vomica produced death by its secondary effects upon the respiration, that "strychnine, administered in a strong dose, produces death, not by asphyxia, but by a direct action upon the nervous system, similar to what may be produced by a strong electric shock."—*London Medical Repository, Jan.* 1823.

On a new Mode for the Cure of Prolapsus Ani. By M. Dupuytren.—M. Dupuytren having frequently had occasion to remark the inefficacy of most of the plans adopted for the cure of persons labouring under prolapsus ani, hit upon a mode of cure which he considers as one of the most important inventions in surgery of which he has been the author. This simple operation consists merely "in cutting off a greater or less number of the cutaneous and projecting folds of the verge of the anus: the operation contracts the opening, by drawing it together almost in the same manner as occurs in a purse when the strings are drawn tight." The number of folds which M. Dupuytren removes is proportioned to the size of the protruded intestine, and the dilitation of the anus. Ten or twelve patients have been treated by this method, and all have been cured without any unpleasant symptom or relapse.

Should an artery be opened during the operation, M. Dupuytren immediately cauterizes it. No dressing is required, attention to cleanliness being commonly sufficient to produce the cicatrization of the wounds, and the complete cure of the patients, in less than twelve or fifteen days.—*Journal Universel des Sciences Médicales, Octobre*, 1822.

Case of Cæsarean Section. By M. Borrone, Surgeon at Salto.—A female, aged thirty-six years, died, at the full period of gestation, of dysentery, with which she had been affected for two months. She was in a complete state of emaciation. M. Borrone having been immediately called, performed the Cæsarean section, and extracted from the body, twelve minutes after death, a small emaciated female child. It was some time before the infant uttered the least cry; but it felt warm, breathed, and the pulsations of the heart were manifest. Thirty-two minutes after extraction, it began to suck. It gradually acquired strength, and about the middle of the year 1822 was tolerably robust.—*London Medical Repository.*

METEOROLOGICAL OBSERVATIONS

FOR DECEMBER, 1822.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.			Thermometer.			Winds.			Rain Gauge.	Hygrometer.	Weather.
	7 A M	2 P M	9 P M	7 AM	2 PM	9 PM	7 AM	2 PM	9 PM			
1	29 70	29 84	29 98	57	58	40	w	w	w	—.23	780	cloudy
2	30 44	30 44	30 38	30	46	33	nw	nw	nw		735	clear
3	30 30	30 15	30 22	31	28	20	ne	nw	nw		720	cloudy
4	30 28	30 28	30 20	16	28	22	nw	sw	sw		700	clear
5	30 16	30 16	30 16	19	35	32	sw	sw	nw		695	cloudy
6	30 16	30 30	30 52	22	34	26	nw	nw	nw		687	clear
7	30 50	30 5	30 36	25	40	39	n	e	e		686	variable
8	30 20	30 2	30 26	33	45	36	nw	nw	nw		690	cloudy
9	30 42	30 38	30 24	28	41	36	nw	nw	nw		688	clear
10	30 10	30 10	30 00	34	54	42	sw	sw	sw		688	variable
11	29 88	29 94	29 98	40	59	47	sw	sw	sw		688	clear
12	30 08	30 23	30 36	44	56	42	sw	sw	sw		692	do
13	30 47	30 47	30 40	40	45	42	sw	sw	ne	—.22	698	cloudy
14	30 26	30 26	30 15	41	49	46	ne	ne	nw	—.19	715	do
15	30 15	30 36	30 54	42	32	22	nw	nw	nw		684	variable
16	30 68	30 68	30 48	15	44	25	n	n	nw		684	clear
17	30 30	30 30	30 30	32	36	35	nw	w	w		684	cloudy
18	30 30	30 30	30 30	33	48	45	n	sw	sw	—.24	698	do
19	30 10	30 25	30 34	45	49	48	sw	n	n	—.04	710	do
20	30 35	30 35	30 44	36	40	34	nw	nw	n		700	do
21	30 50	30 50	30 45	30	34	33	n	nw	w		700	do
22	30 34	30 30	30 22	34	36	32	w	w	nw		694	variable
23	30 14	30 26	30 36	27	28	16	nw	n	n		682	cloudy
24	30 40	30 40	30 26	14	28	20	sw	sw	w		674	clear
25	30 12	30 00	30 00	24	35	26	w	w	w		674	cloudy
26	30 00	30 18	30 34	27	38	27	w	w	w		674	do
27	30 42	30 42	30 36	20	34	32	w	nw	nw		700	variable
28	30 29	30 29	30 29	31	33	32	nw	nw	nw		700	cloudy
29	30 29	30 29	30 35	22	41	32	nw	nw	w		682	clear
30	30 46	30 58	30 65	23	32	19	w	nw	nw		661	do
31	30 79	30 76	30 68	14	30	26	nw	ne	ne		654	variable

The quantity of rain which fell this month, is 92—100ths of an inch.

The weather of the month of December was very mild. On the 1st, at 8 A M thunder and lightning, accompanied with a heavy shower of rain; in the south vespertine lightning. On the 3d a gentle fall of snow, which melted as it came to the earth. Another fall in the night, which slightly covered the ground and house tops. On the 21st it fell one inch and a half deep on the level, and, on the 22d, one inch. A few flakes fell on the mornings of the 23d and 28th. Sleet in small quantities in the night of the 16th, at 2 P. M. of the 20th and at 9 A M. of the 25th. The sun was obscured on the 3rd, 13th, 14th, 18th, 19th, 20th, 21st, and 28th, and part of the 23rd and 25th. Thick fogs on the mornings of the 8th, 13th, 14th, 19th, and 20th.

METEOROLOGICAL OBSERVATIONS

FOR JANUARY, 1823.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.			Thermometer			Winds.			Rain Gauge.	Hygrometer.	Weather.
	7 A M	2 P M	9 P M	7 AM	2 PM	9 PM	7 A M	2 P M	9 P M			
1	30 51	30 38	30 16	24	37	33	ne	ne	ne	1.54	665	cloudy
2	29 98	30 02	30 12	32	45	37	sw	sw	nw		672	variable
3	30 20	30 20	30 20	32	44	36	cal.	sw	sw		674	do
4	30 20	30 04	29 86	36	37	29	ne	ne	ne	1.10	685	cloudy
5	29 75	29 98	30 09	35	35	22	sw	nw	nw	—.04	672	do
6	30 26	30 34	30 50	17	25	19	nw	nw	nw		675	clear
7	30 54	30 54	30 38	13	23	25	nw	nw	sw		670	do
8	30 27	30 19	30 14	22	41	32	sw	sw	sw		670	do
9	30 10	29 85	29 68	28	40	39	w	sw	s	—.18	634	cloudy
10	29 50	29 92	30 08	34	35	24	sw	nw	nw		665	do
11	30 18	30 04	29 88	16	38	30	nw	nw	s		665	variable
12	29 60	29 66	29 74	28	43	32	w	n w	nw		665	cloudy
13	29 92	29 98	29 98	16	34	26	nw	n w	nw		658	clear
14	30 24	30 28	30 10	18	30	20	nw	n w	nw		650	do
15	30 06	30 00	30 16	24	41	34	nw	sw	sw		650	do
16	30 20	30 20	30 20	28	41	30	nw	nw	nw		650	do
17	30 20	30 20	30 20	26	40	34	e	e	e		654	cloudy
18	30 20	30 20	30 08	28	48	45	nw	cal.	cal.		662	clear
19	30 02	29 94	29 96	43	59	50	sw	sw	sw	—.61	695	cloudy
20	29 98	30 10	30 18	38	48	42	ne	ne	ne	1.25	692	do
21	30 28	30 34	30 40	40	57	42	nw	nw	nw		692	variable
22	30 40	30 35	30 16	31	40	38	nw	n	n	—.16	685	cloudy
23	30 00	30 00	30 18	34	37	31	n	n	nw	—.02	676	do
24	30 28	30 19	30 12	25	43	34	nw	nw	ne		682	variable
25	30 00	30 00	29 99	33	35	34	ne	ne	ne	—.10	686	cloudy
26	29 99	29 99	30 04	32	38	33	ne	ne	ne		692	do
27	30 04	30 04	30 04	32	40	36	ne	n	n	—.10	697	do
28	30 04	30 04	30 04	34	42	30	w	w	w		698	do
29	30 04	30 04	30 04	23	38	32	w	nw	nw		678	variable
30	30 04	29 98	29 94	27	37	28	nw	w	w		671	cloudy
31	29 86	29 74	29 69	27	39	29	sw	sw	nw		658	variable

The quantity of rain in this month is 5 inches and 10—100ths.

This month was uncommonly pleasant; from the 13th to the 18th, it very much resembled that season called Indian summer; the wind was very light, the sun at setting assumed a red appearance in a clear sky, the atmosphere dry, and the nights cloudless and starry. On the 1st, snow at 6 A M the wind boisterous, which carried the snow in drifts, so that the depth on the level could not be ascertained; at 9 A M a fall of sleet; at 11 A. M. heavy rain, which lasted all day. A little snow fell in large flakes at 11 A. M on the 10th. On the 25th snow at 8 A. M. and by 2 P. M. there fell 4 inches. A fall of sleet at 11 P M on the 27th. The sun was obscured on the 4th, 5th, 20th, 23d, 26th, 27th, and 28th. Fog on the mornings of the 4th, 19th, 26th, 27th, and 28th.

METEOROLOGICAL OBSERVATIONS

FOR FEBRUARY, 1823.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.						Thermometer.			Winds.			Rain Gauge.	Hygrometer.	Weather.
	7 AM		2 PM		9 PM		7 AM	2 PM	9 PM	7 AM	2 PM	9 PM			
1	30	10	30	10	30	10	18	29	24	nw	nw	nw		658	clear
2	30	10	30	04	30	00	26	43	33	w	w	s		670	do
3	29	98	30	00	30	04	36	38	32	se	se	nw	—.50	675	cloudy
4	30	10	30	18	30	25	25	30	18	nw	nw	nw		647	clear
5	30	32	30	19	30	21	10	19	20	nw	nw	nw		639	do
6	30	21	30	21	30	21	8	19	18	nw	nw	nw		632	do
7	30	21	30	18	30	14	4	17	14	nw	nw	nw		628	do
8	30	10	30	05	30	24	2	19	16	nw	nw	nw		626	cloudy
9	30	44	30	50	30	50	18	31	26	nw	ne	ne		642	variable
10	30	50	30	48	30	44	25	36	32	ne	ne	ne		654	cloudy
11	30	32	30	30	30	22	30	35	33	ne	ne	nw		661	do
12	30	03	30	00	30	00	32	45	34	nw	w	w		654	do
13	30	18	30	18	30	12	30	38	32	w	sw	ne		660	variable
14	30	07	29	71	29	32	29	36	29	ne	ne	ne		655	cloudy
15	29	42	29	64	29	70	31	32	26	ne	sw	nw		648	do
16	29	98	30	24	30	31	18	28	16	n	nw	nw		644	do
17	30	3	30	28	30	24	10	26	24	nw	sw	sw		640	do
18	30	20	30	18	30	18	21	36	20	sw	nw	nw		637	clear
19	30	36	30	40	30	37	14	31	26	nw	sw	sw		653	do
20	30	30	30	18	30	04	32	36	34	s	sw	cal.		660	cloudy
21	30	16	30	06	29	94	32	49	40	sw	sw	sw		658	clear
22	29	86	29	94	29	96	38	50	36	s	sw	sw		660	do
23	29	96	29	86	29	69	30	35	26	ne	e	ne		662	cloudy
24	29	53	29	64	29	76	27	29	26	ne	ne	ne		660	do
25	29	82	29	89	29	89	20	38	30	nw	nw	nw		664	clear
26	29	89	29	76	29	81	27	36	34	se	se	se	—.06	656	cloudy
27	29	88	29	98	30	04	29	34	22	nw	nw	nw		656	clear
28	30	28	30	30	30	30	10		18	w	w	w		648	do

The quantity of rain which fell this month is 56—100ths of an inch.

The weather throughout the month of February was considerably colder than in January. On the morning of the 7th and 8th, at day-break, the thermometer stood below zero in the lower parts of the city, in a N. W. exposure, near the river Hudson. Snow fell on the morning of the 3rd, about half an hour before day-light. On the 8th, at 3 P. M. snow fell for half an hour. On the night of the 11th, there fell four inches. On the night of the 13th, one inch. On the afternoon of the 14th considerable snow fell with a strong wind, which carried it in drifts. On the 23rd the snow fell from 7 to 10 A. M. and on the 24th it continued falling all day, with a brisk N. W. wind. A little fell at 10 A. M. on the 26th. The accumulated depth was about 14 inches on a level. The sun was obscured on the 3rd, 8th, 20th, 23d, 24th, and 26th, and greatest part of the 9th and 17th. Thick fog and light wind on the 20th.

We have received the following note from Dr. Stearns, with a request that it might be inserted in the present number:

To the Editors.—The last number of your Journal contains a censure upon those editors who have made extracts from that work, without giving the usual credit, and also upon those authors who have given permission to others to republish their communications. As the latter may have reference to an article on the *Secale Cornutum*, in a previous number, I trust a brief explanation will evince the venial nature of the offence.

It is well known that from the agency which I had in first introducing the Secale Cornutum into practice, I had very unexpectedly incurred a high responsibility for the mischief which its improper use was daily producing. Occasions were sought for to attribute this ill success to the ergot rather than to its true cause, the abuses to which it had been subjected in the hands of ignorant and rash practitioners. I therefore deemed it necessary to give to the article which I first published in your Journal, a wider circulation, that the correction might be co-extensive with the error: and thus prevent, if possible, future injury, and the consequent rejection of a remedy, which, in skillful hands, is productive of great benefit, and for which no substitute has ever been discovered.

JOHN STEARNS.

New-York. Jan. 11, 1823.

NOTICE.

A review of Mr. Andersons' edition of "Cooper's Surgical Dictionary," and Dr. Steven's edition of "Cooper's First Lines," which had been prepared for this number, is excluded for want of room—it shall appear in our next.

Communications from Governor Clinton, Professors Hosack, Mott, and Renwick, and Doctors Gloninger, Piexotto, Walters, Cleeve, &c. will appear in our next.

ERRATA.

Page 54, line 13th from the bottom, for 'The regularity,' read *The irregularity*, &c.
page 55, line 3d, for 'constitution,' read, *constitutional affection.*
" " line 12th, for 'unusually,' read, *universally.*
page 56, 5th line from bottom, for 'clear,' read, *clean.*